COTTON

Volume 83
Number Eight
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JUNE, 1919

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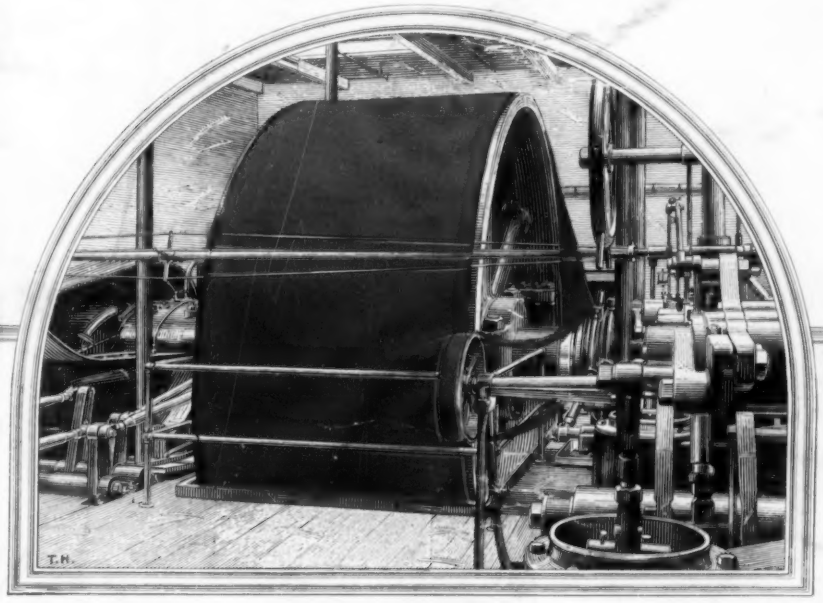

This is an 80-in. 3-ply Heart Brand Belt in a Massachusetts paper mill. It began its service in 1911. It carries 1100 horsepower. The cost of transmitting a horsepower a week is $.0045.

The Test of Adaptability

For some materials there is no substitute. Such, for instance, is leather for belting. Its superiority for all the major requirements is recognized by transmission experts. The belt shown above, for instance, was transferred from one drive to another—lengthened by splicing, and cut down 2 inches in width—an adaptation that is possible only with leather.

The advantages of leather for transmission are developed to their maximum in Graton & Knight Standardized Series Leather Belts. They are that rare thing in business—a highest-quality line enjoying the largest sales. Do you know of any other brand in any highly competitive field that combines highest grade with biggest sale? Talk that over in your transmission conferences.

Write for booklet on standardization as applied to belting

The Graton & Knight Mfg. Company, Worcester, Mass., U. S. A.

GRATON AND KNIGHT

Oak Leather Tanners, Makers of Leather Belting, Lace Leather, Packings, and Specialties.

BRANCHES OR DISTRIBUTORS IN ALL PRINCIPAL CITIES.

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PORCELAIN GUIDES
for
Textile Machinery
Mitchell-Bissell Co.
251-255 Fourth Avenue, New York
Send for
New Catalogue

AN IMPORTANT ADVANTAGE

OF THE

NORTHROP LOOM

TRADE-MARK

with a materially shortened number of working hours per week, is its capacity to be operated during the noon hour and a corresponding time night or morning without any weavers at all

Looms under such conditions violate no labor laws, but do increase the amount of cloth 15 to 25 per cent. per loom compared with what can be done by common looms on the same goods running mill hours only

The shorter the working day the greater the proportional advantage of the Northrop loom in this respect

You Can Neither Afford

to operate common looms in competition with Northrop Looms, nor to experiment with makeshifts

DRAPER CORPORATION

HOPEDALE MASSACHUSETTS

Southern Office
188 South Forsyth Street Atlanta Georgia

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188 South Forsyth Street Atlanta Georgia

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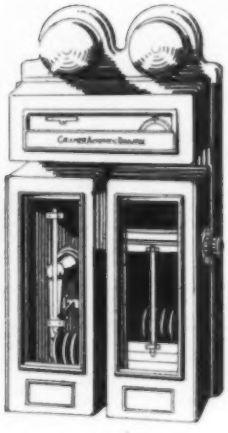
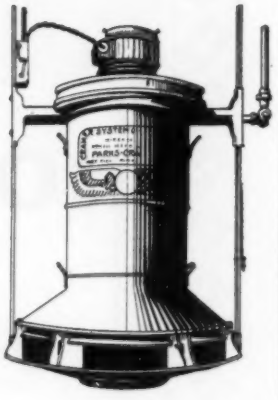
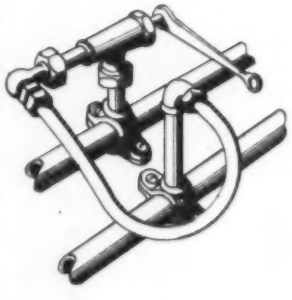
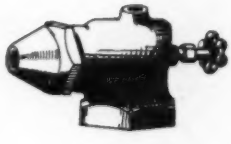
Buying Humidity Scientifically









YOU who have been buying humidifying apparatus during the past twenty-five or thirty years have not been buying on a scientific basis—not always on a common sense basis.

Sometimes you have bought what you thought you wanted. Sometimes you have bought what some rule of thumb indicated you might possibly need.

With the best of three standard kinds of equipment between the covers of our data books, our engineers approach your problem not only scientifically, but professionally.

They want you to have the best kind of humidifying apparatus—the one best fitted to your problem and your conditions.

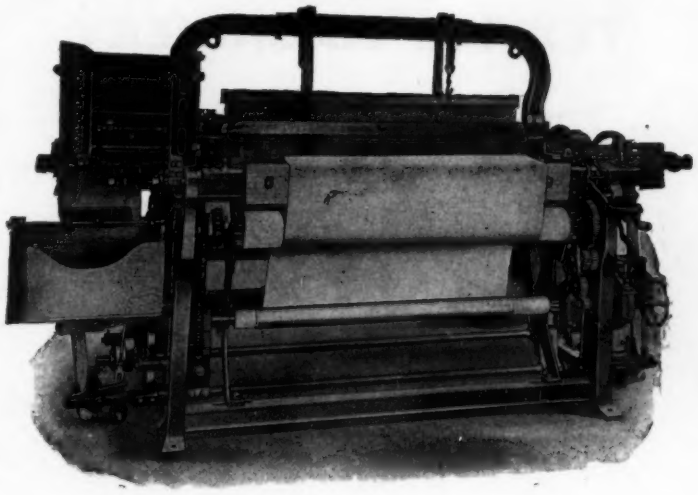
They want you to have it because they know that "the house" wants you to have it. They know that we will not knowingly sell a humidifier equipment that is not scientifically right.

Parks-Cramer Company

Successor to

The G. M. Parks Company Stuart W. Cramer

FITCHBURG, MASS. BOSTON, MASS. CHARLOTTE, N. C.



THE STAFFORD Automatic Loom stands for low operating cost and high quality of fabrics.

It has the widest scope of any automatic loom and can be easily changed over from one fabric to another.

And remember that while saving 50% to 60% in weaving costs for you the weavers can earn from 40% to 50% more wages.

Write for illustrated catalog.

The Stafford Company

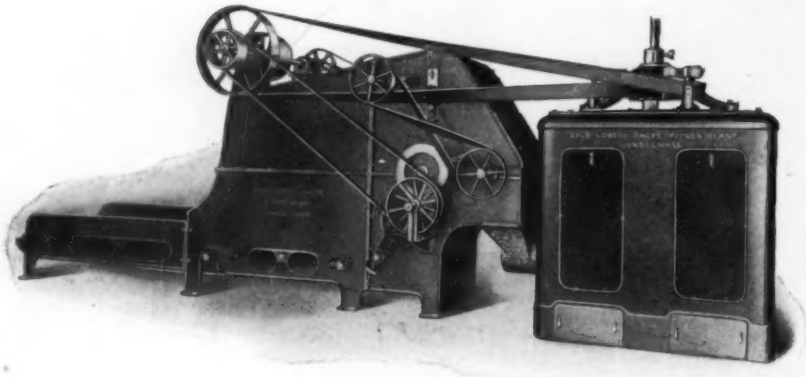
Readville, Mass.

J. H. MAYES, Southern Agent

1112 Independence Building, Charlotte, N. C.

SACO-LOWELL SHOPS

TEXTILE MACHINERY



OPENING EQUIPMENT

INCLUDING

Vertical Openers

WITH

BALE BREAKERS ATTACHED

SHOPS

BIDDEFORD, ME. LOWELL, MASS. NEWTON UPPER FALLS, MASS.

EXECUTIVE OFFICES

BOSTON, MASS.

ROGERS W. DAVIS, Southern Agent, CHARLOTTE, N. C.

BRANCH OFFICE, GREENVILLE, S. C.

Thacker Warp Stop Motion Frame

Attachment used whereby open drop wires can be drawn in at frame and transferred to loom as readily and safely as are the closed drop wires

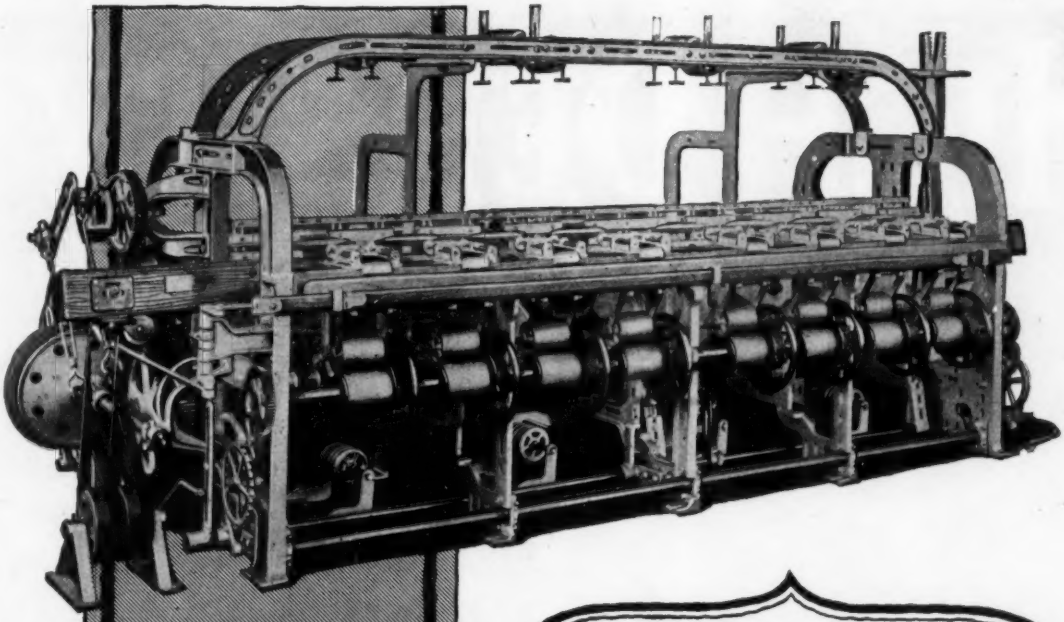
We Offer to the Trade a New Bobbin Stripper for Automatic Loom Bobbins.

Crompton & Knowles Loom Works

Worcester, Mass.

Providence, R. I. Philadelphia, Pa. Paterson, N. J.

Southern Representatives---Alexander & Garsed, Charlotte, N. C.
South American Representatives---W. R. Grace & Co., New York



MEDIUM WEB LOOM—

One operator attends two of these looms.

This loom has been developed to cover the requirements for webbing and asbestos brake lining.

10 ft. 6 in. between frames---2 sections with 8 spaces to weave up to 3 inches in width.

Write for further information about looms for weaving all narrow fabrics.

FLETCHER WORKS

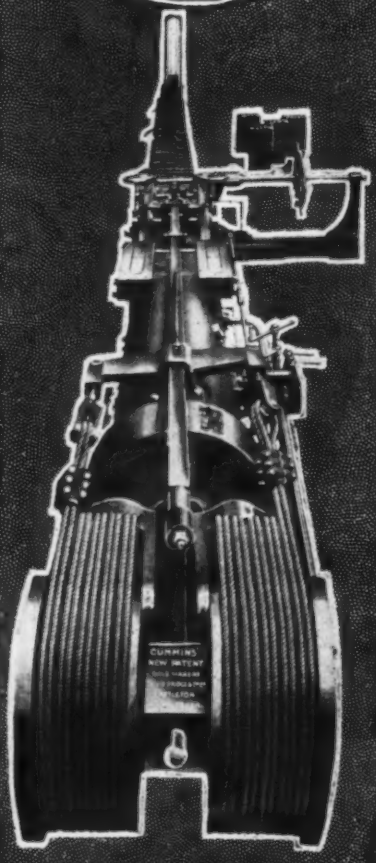
Formerly Schaum & Uhlinger

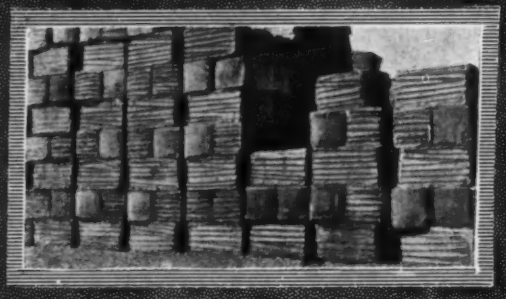
Glenwood Ave. at Second Street

PHILADELPHIA, U. S. A.

HIGH DENSITY COTTON BALING PRESSES

56 Lbs. PER CU FT.





THE Great Problem confronting both the cotton grower and manufacturer of America heretofore has been the poor methods employed in baling.

That deficiency has been a very expensive one to the textile mills as well as the producer, for it has robbed the farmer of much income and prevented the mill man from getting the high grade staple he otherwise would have secured.

The Cummins' Horiontal High Density End-Pressed Baling Press has invaded the cotton fields of America and will henceforth produce bales of such density that the cubic measure will be reduced to less than half the former size, or—56 pounds to the cubic foot.

This is the Press that has given India the reputation for such perfect bales which reach the destination, even to the furthermost ports, in perfect condition.

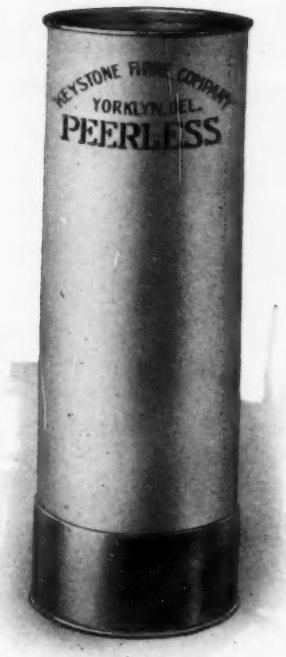
Illustrated catalogue with full details will be mailed on request.

W. D. CRUMPTON

American Representative

29 BROADWAY NEW YORK

DAVID BRIDGE & CO. Ltd.
Manchester, Eng.



HERE'S THE ROVING CAN FOR YOU!

Keystone Peerless Seamless Roving Cans do more than merely fill your needs.

They give many more years of service than others—hard usage will not affect them—they cannot wear to a rough edge.

Your finest yarns are safe—no seams, rivets or splinters.

Constructed for permanence—steel top and bottom rings and pressed steel concave bottom, with fibre or steel kicking band, rolled in and under into an indestructible, interlocked, invisible joint.

Write for prices and terms, and ask for our book on Keystone Fibre Holloware Mill Equipment which fully explains their superiority.

Keystone Fibre Company

Box 43 **Yorklyn, Delaware**

New Publications

—giving specific information on important foreign trade subjects

WITH the foreign trade of the United States now breaking all records, there is a greater demand than ever for specific information by those who wish to enter foreign markets or to extend their present business with other countries. To help meet this need we have published the following booklets:

Shipping's Share in Foreign Trade

Gives the fundamentals of ocean transportation; details of how shipments are handled; explains methods of procedure, shipping documents, factors governing rates, insurance, etc.

How Business with Foreign Countries is Financed

Describes, by means of reproductions of actual forms and documents, the banking procedure and methods used in financing exports and imports.

Trading with China

Describes commercial customs in China, and methods found successful in dealing with the Chinese.

Canada

Discusses the economic position and plans for commercial and industrial development of Canada.

Banking Service for Foreign Trade

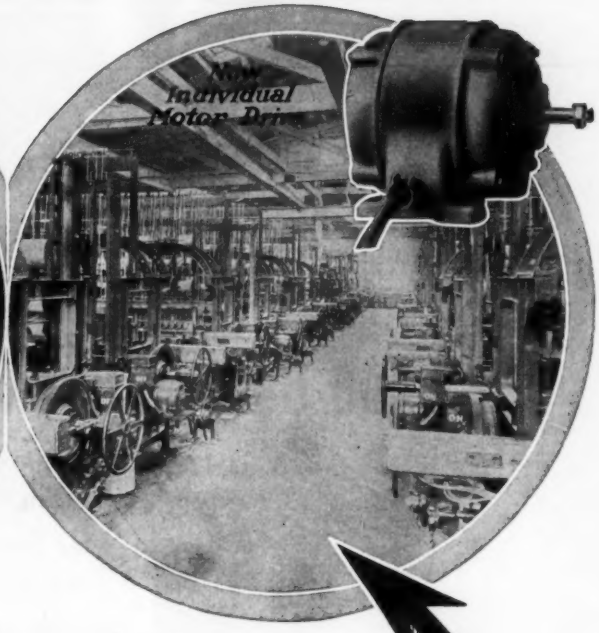
Outlines the various world-wide services offered by this Company and its connections in the financing of business with other countries.

These booklets are available on request. Manufacturers and merchants desiring data relating more specifically to the export possibilities of particular products, are invited to call on our FOREIGN TRADE BUREAU for detailed information.

Guaranty Trust Company of New York

New York London Liverpool Paris Brussels

Capital and Surplus $50,000,000 Resources Over $700,000,000



John Sidebotham, Inc., of Philadelphia, Pa., has made the complete change to

INDIVIDUAL MOTOR DRIVE

All line-shafting, hangers and belts have been removed, ADDITIONAL MACHINES INSTALLED, and all more compactly and more conveniently arranged. Westinghouse Textile Motors were installed on all machines.

A 24% Reduction in the Annual Power Bill with a 19% Increase in Production

Here are the figures:—

	Engine	Individual Motor-drive	Saving Effected	Production Increased
Annual Power Bill.....	$7127.	$5395.	$1732	
Annual production per loom.	4160 lbs.	4940 lbs.		780 lbs.

Net cost of the electric installation, **$15181.**

Westinghouse Textile Engineers are prepared to give you the benefit of a broad experience in the solution of your power and production problems.

Westinghouse Electric & Manufacturing Co.,

East Pittsburgh, Pa.

FROM MECHANICAL-TO INDIVIDUAL-MOTOR-DRIVE

W
WESTINGHOUSE ELECTRIC

Westinghouse

You are NOT Using
Lane Canvas Baskets and Trucks?

FIG.20.

Then it must be you have never stopped long enough to ask yourself why.

FIG.27

Consider for a moment their advantages as applicable to your various departments.

In the first place, their long wear removes them from the First-Cost Class and places them on a Cost-Per-Year basis. Then you come to the light weight and easy handling qualities. The help appreciates this, and also the absence of nails and splinters which tear hands and clothing. Their perfectly smooth interior reduces waste, too, especially in the fine goods mill.

All Lane Trucks are equipped with our improved casters with guards which prevent waste yarn, etc., from clogging. This saves the trucks, the floors and the help.

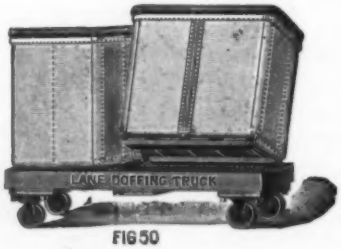


FIG 50

Write for Catalog No. 65

FIG. 34

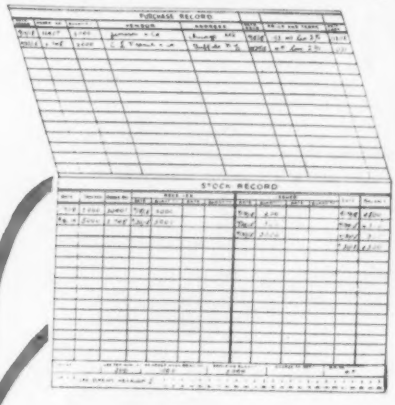
W. T. Lane & Brother, Mfrs.

Poughkeepsie, N. Y.

RAND

Visible Card Records Make Possible Absolute Stock Control

Joseph Edgerton of the Chevrolet Motor Co., New York, after installing RAND Visible Card Record Equipment in all the Chevrolet Branches throughout the United States said, "It is indeed singular how easy it is in business to follow the beaten path. For years we filed live information in drawers and boxes—put up with the resulting slowness, inaccuracies, and trouble just because of unfamiliarity with the advantages of the RAND VISIBLE INDEX."



A 20th Century Card Record for 20th Century Business

The Stewart Motor Corporation, by installing RAND VISIBLE CARD RECORDS made their Spare Parts Department the "Banner Department" of the plant as it enabled them to make shipments in 24 hours.—

From Stewart Truck News."

RAND

Visible Card Records

are daily proving their worth as Stock Records in the largest industries. They are not only saving 50% to 75% of labor and time, but through a simple but wonderful signaling scheme make it impossible to overlook minimum and maximum amounts—insuring against the shortage and over-purchase of material which protection is invaluable in modern business.

RAND VISIBLE CARD RECORDS not only handle efficiently Stock Records but allow of a combination of records heretofore impossible. The record shown here is a combination of a Purchase and Stock Record, consisting of a complete list of vendors and their quotations, purchases, together with a perpetual inventory Stock Record—all carried under one index.

The RAND Systems Department is at your service

The experience gained through many years of applying the VISIBLE idea to records is at your disposal. Whether your proposition is a simple index to your Stock Bins, or the most intricate perpetual inventory Stock Record, there is a RAND method that will save you 50% to 75% in the cost of handling, plus making your records 100% efficient. **Write for our booklet** entitled, "Stock Records," which tells how others in your line of business have applied RAND VISIBLE CARD RECORD EQUIPMENT to solve their problems.

THE RAND COMPANY

2002 RAND Building **North Tonawanda, N. Y.**

Originators and Patentees of Visible Indexing

Marking Problems
Solved Quickly and Satisfactorily

Put your marking problems up to MARKING EXPERTS. We have made a life-time study of BETTER MARKING and are in position—from the standpoint of furnishing machines, inks and SERVICE—to be of real benefit to you. Our modern devices—illustrated in this advertisement—make clean-cut, permanent marks. And they're easy to handle.

Model H-3 Marking Machine. Marks by means of a die.

Used By

Mill Village Laundries

for marking linen.

Cotton Mills and Finishing Plants

for marking finished goods with the brand name and trade-mark.

Dyeing, Bleaching and Finishing Plants

for marking goods with seller's brand and trade-mark.

Knit Goods Plants

use them for marking the lot, stock and size numbers on finished garments—such as underwear and hosiery.

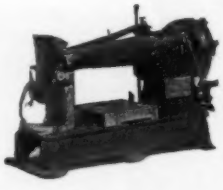
Also Used For

marking nurses' uniforms and surgeons' apparel in first-aid hospitals; for marking linen supplies of factory restaurants; for marking the linen of the welfare department.

Improved No. 8 National Power Marking Machine. Operates like a typewriter.

National Special Inks

are indelible, flow easily, non-smearing, and make a clean-cut mark. Used for ALL MARKING PURPOSES.



Rose Label, Tape and Patch Sewing Machine. For sewing fabric tags on laundry work that can't be marked direct. For sewing patches on union suits for reinforcements for buttonholes.

Address Textile Department

The National Marking Machine Co.

1068 Gilbert Ave. **General Office** **Cincinnati, O.**

New York Office: 40-44 West Fourth St., New York City.

INTERNATIONAL TIME RECORDERS

"Time is Money—Guard It!"

Designing and Drafting Department at Factory of International Time Recording Co., Endicott, N. Y.

Where International Time Recorder Accuracy Begins

ACCURACY in any mechanical product is won through zealous effort and retained by unceasing vigilance. It must be built in detail by detail—each minute part as true and dependable as the finished instrument is to be staunch and trustworthy.

It is because they are made to meet such ideals of reliability that

International Time Recorders

have won the confidence and admiration of critical men wherever time is checked, payrolls computed or cost records kept.

International accuracy begins in the designing and drafting department of the factory at Endicott, N. Y., where experts, working under the most favorable conditions, are constantly alert to safeguard the International reputation. *And it is carried just as scrupulously through every department of the plant.*

It is this manufacturing policy which protects you and your employees with unfailingly correct timekeeping, payroll data and cost recording when you install Internationals.

International accuracy is backed by International simplicity. The mechanically-made records are clearly printed and so easily handled that they cut out *90 per cent* of the clerical work—*and clerical cost*—of timekeeping, payroll computing and cost recording.

International Automatic Card Recorder

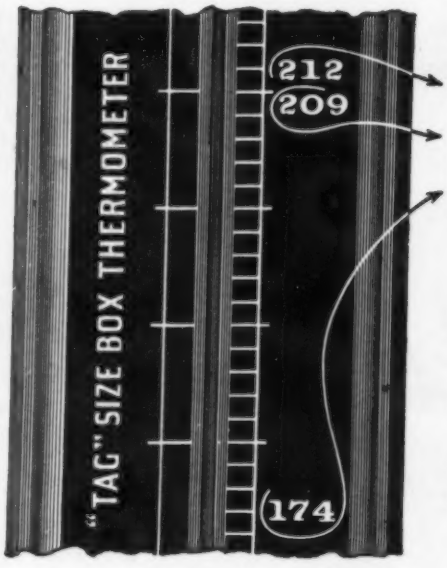
Internationals are made in 260 models either electrically operated or spring-driven

Write for the booklet "The Ins and Outs of Your Business"

INTERNATIONAL TIME RECORDING CO.

General Offices: 50 Broad Street, New York City **Works: Endicott, N. Y. / Toronto, Can.**

Canadian Office: International Business Machines Co., Ltd., 300 Campbell Avenue, Toronto
London Office: 57 City Road, Finsbury, London, E. C., England
Paris Office: 75 Avenue de la Republique, Paris, France
Offices and Service Branches in all principal cities of the world



Loom Breakage Warps Slashed at Different Temperatures

Knots	Bunches	Coarse Threads	Unknown	Total
122	54	10	39	225
85	57	17.5	3.5	163
45	48	3	28	124

Simply a Matter of Maintaining the Proper Temperature

Somewhere between 171° and 212° F. is the proper temperature at which the "size" mixture at any cotton mill should be applied to the yarn in order to secure the *best* weaving results.

The *exact* temperature varies at different mills according to the number of the yarn and the "size" formula used.

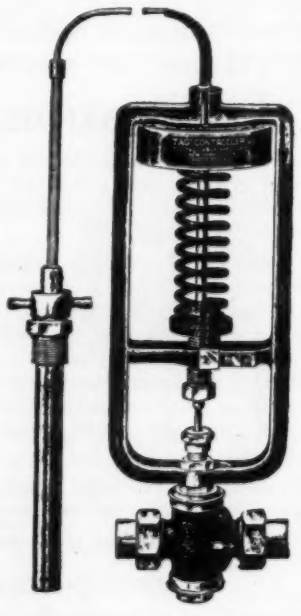
At the New England mill from which the table of results shown above was taken, 174° F. is *their* proper temperature for producing perfectly sized and uniform warps—and they are now maintaining it *uniformly* with

"Tag" Size Box Automatic Temperature Controllers

At another mill, 208° was the *usual* temperature of operation with *variable* weaving results. After a series of comparative tests at different temperatures, the mill superintendent reports that they "now apply the 'size' to the yarn at 185° F. - - and constantly *maintain* that temperature in the size boxes by means of "TAG" Automatic Temperature Controllers".

Furthermore, that the "warps slashed at that temperature are woven easier with *less* breakage of yarn and the cloth is superior in 'feel' and 'cover'."

You, too, can secure such desirable results by determining the *exact* temperature at which the "size" mixture should be maintained in your size boxes—and then *uniformly* maintaining that temperature with "TAG" Automatic Temperature Controllers.



C. J. TAGLIABUE MFG. CO.
TEMPERATURE ENGINEERS
18-88 Thirty-Third St. Brooklyn, N.Y.

Bulletin C-387 will provide further details. Write for a copy—TODAY.

"Set it and forget it."

THE SIGNODE SYSTEM,

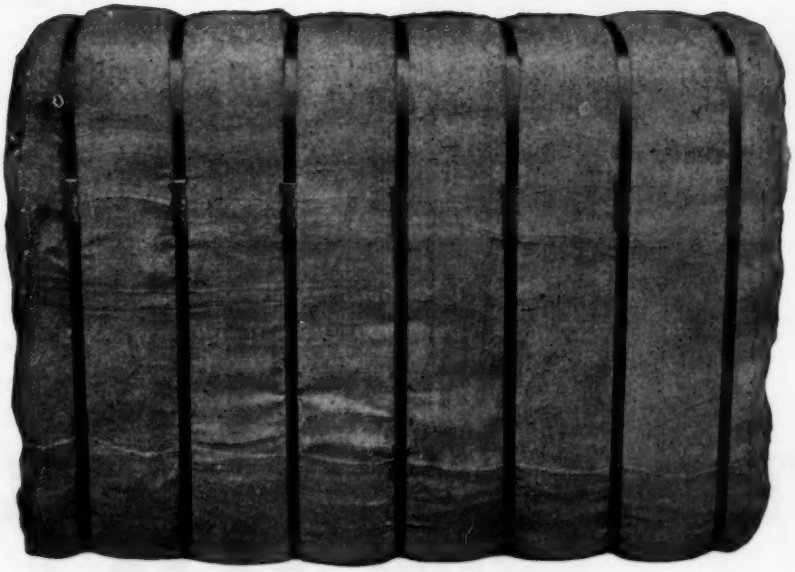
Inc.

Manufacturers of

Baling Ties
Buckles
Box Strapping

Signode Equipment for banding bales and boxes.

Signode System gives you Security, Economy and the most rapid methods known for securing bales and boxes



SIGNODE SYSTEM, Inc.

Sole Manufacturers and Distributors.

ALVIN LOVINGOOD, Southern Manager

ATLANTA, GA.

Chicago, Ill. Philadelphia, Pa. Boston, Mass. New York City

The Dictaphone clears your desk hours earlier

A clear desk, a clear conscience, and a week-end of needed change and recreation. The greatest help and joy to the busy cotton manufacturer is The Dictaphone, because it enables him to finish his letter-writing early in the day, giving him more time for thinking, planning, and organizing.

The Dictaphone is always ready to take your letters when you are ready to dictate. It helps you to get that much needed outside recreation which keeps the body fit and the brain clear.

15-Minute Demonstration

A fifteen-minute demonstration in your office, on your own work, will be given for the asking. Write today.

THE DICTAPHONE

Registered in the U. S. and Foreign Countries

Dept. 137-F, Woolworth Building, New York City

Atlanta	Charlotte	Columbus	Nashville	Charleston
Jacksonville	Burlington	Brunswick	Knoxville	Savannah
Montgomery	Wilmington	Valdosta	Memphis	Tampa

Branches Everywhere. *Write for Booklet. "The Man at the Desk"*

There is but one Dictaphone, trade-marked "The Dictaphone," made and merchandised by the Columbia Graphophone Company.

"The Shortest Route to the Mail-Chute"

One Man
Does the Work of Ten

The Most Important Factor
In the Growth of the Textile Industry

Utility Trucks
Low Platform Trucks
Elevating Trucks
Tractors
Crane Trucks
Dump Body Trucks

Write for pamphlet entitled "Features" which describes these models and tells why Baker Electric Trucks and Tractors are the choice of men who know.

The Baker R & L Co.
ALSO
makers of Raulang Electrics and Owen Magnetic Passenger Cars.

Southern District Office,
301 Flatiron Bldg.,
Atlanta, Ga.

The progressive South of today is rapidly becoming the world's textile center. New mills with many thousands of spindles are coming into production making a considerable additional demand upon the available mill labor.

B. E. Geer, president of the Southern Textile Association, says that the most important factor in the South's growth has been skilled and contented labor living under wholesome conditions. If this growth is to continue, the labor must be conserved. Wasteful methods cannot survive.

With Baker Electric Industrial Trucks and Tractors one man does the work of ten or more. Time is saved. Production costs are decreased. Congestion is prevented. And labor is conserved.

The Baker System of Industrial Transportation includes a service—trained engineers are ready to study your haulage problems without obligation to you. Why not avail yourself of this?

The BAKER R & L COMPANY
CLEVELAND, OHIO ~ ORIGINATORS OF

The BAKER SYSTEM *of* INDUSTRIAL TRANSPORTATION

Roll Call

of White Truck Fleets In Actual Service

THERE are now 2,774 White Fleets in active service, totaling 33,139 White Trucks, exclusive of all single truck installations. These fleets have steadily grown to their present size through repeat orders from owners who demand unfailing truck performance and who base their purchases on carefully kept cost records.

The following is a representative list of White owners in the Textile and Allied Industries. This list of owners operate a total of 185 White Trucks

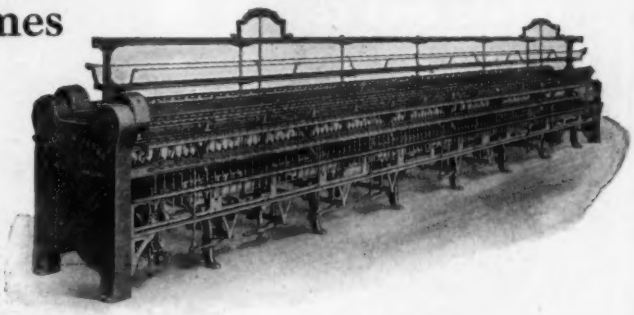
American Felt Company	Boston, Mass.	E. & H. Levy	New York City
American Manufacturing Company	Brooklyn, N. Y.	Majestic Manufacturing Co.	Belmont, N. C.
American Woolen Company	Lawrence, Mass.	Massachusetts Cotton Mills	Lindale, Ga.
Amoskeag Manufacturing Company	Manchester, N. H.	Namquit Worsted Company	Bristol, R. I.
Arlington Mills	Lawrence, Mass.	Narrow Fabric Company	Reading, Pa.
Ashworth Brothers, Incorporated	Fall River, Mass.	Nashville Bag & Burlap Company	Nashville, Tenn.
Avondale Mills	Birmingham, Ala.	Nelson Knitting Company	Rockford, Ill.
Joseph Bancroft & Sons Company	Wilmington, Del.	Pacific Mills	Columbia, S. C.
Bibb Manufacturing Company	Macon, Ga.	Pacific Mills	Lawrence, Mass.
Joseph Block	Philadelphia, Pa.	Frank F. Pels & Company	New York City
Bowen-Jewell Company	Jewell, Ga.	Phoenix Silk Manufacturing Company	New York City
Thomas E. Brown & Sons	Philadelphia, Pa.	The Phoenix Woolen Company	Stafford Springs, Conn.
Burson Knitting Company	Rockford, Ill.	Piedmont Manufacturing Company	Piedmont, S. C.
Cannon Manufacturing Company	Concord, N. C.	The Rich-Sampliner Company	Cleveland, Ohio
Cheney Brothers	S. Manchester, Conn.	Richmond Hosiery Mills	Chattanooga, Tenn.
Cleveland-Akron Bag Company	Cleveland, Ohio	Richmond Lace Works	Boston, Mass.
Conestee Mills	Greenville, S. C.	Riverside & Dan River Cotton Mills	Danville, Va.
Crompton Company	Providence, R. I.	Rockford Mitten & Hosiery Company	Rockford, Ill.
Durham Hosiery Mills, Incorporated	Durham, N. C.	Rockland Webbing Company	Rockland, Mass.
Eva Jane Mills	Sylacauga, Ala.	A. H. Sands & Company	New York City
Everlastic, Incorporated	Chelsea, Mass.	E. D. Sassoon & Company	Bombay, India
Fonda Glove Lining Company	Fonda, N. Y.	A. A. Shuford Mill Company	Hickory, N. C.
Georgia Cotton Mills, Incorporated	Atlanta, Ga.	R. & H. Simon Silk Company	Easton, Pa.
Golden Belt Manufacturing Company	Durham, N. C.	Smith & Kaufman	New York City
Paul Guenther, Incorporated	Dover, N. J.	Southern Manufacturing Company	Athens, Ga.
Hamilton Woolen Company	Boston, Mass.	Stafford & Company	Philadelphia, Pa.
Louis E. Harrower	Amsterdam, N. Y.	Stark Mills	Manchester, N. H.
Heinsheimer Brothers	New York City	J. L. Stifel & Sons	Wheeling, W. Va.
Highland Park Manufacturing Company	Rock Hill, S. C.	Valatie Yarn Company	Valatie, N. Y.
Hill & Cutler Company	New Bedford, Mass.	Vari Lace Manufacturing Company	New York City
Indian Bleaching, Dyeing & Print'g Works	Bombay, India	Virginia Cotton Mills	Swepsonville, N. C.
Killingly Manufacturing Company	Killingly, Conn.	The Viscose Company	Marcus Hook, Pa.
Thomas Kiston & Son, Incorporated	Stroudsburg, Pa.	Ward-Meehan Company	Philadelphia, Pa.
B. B. & R. Knight	Manchaug, Mass.	Warrant Warehouse Company	Birmingham, Ala.
B. B. & R. Knight	Providence, R. I.	James White Cotton Mills	Barnett Shoals, Ga.
Louis Kraemer & Company	Stony Creek, Pa.	White Haven Silk Company	White Haven, Pa.
Lancaster Mills	Clinton, Mass.	White-Williamson Company	Burlington, N. C.
James Lee & Son	Bridgeport, Pa.	Jas. N. Williamson & Sons Company	Burlington, N. C

A copy of the complete Roll Call will be sent to anyone upon request

THE WHITE COMPANY
CLEVELAND

On Ring Spinning Frames

NON-FLUID OIL
PREVENTS
SPATTERING.
SAVES ROLL
COVERINGS.



Ring Spinning Frame

THE adhesiveness of NON-FLUID OIL prevents it from spattering or creeping from roll neck bearings of Ring Spinning Frames.

The importance of this fact is plain when you remember that oil stains spoil more of your product than all other causes put together.

TRADE MARK REGISTERED IN
NON-FLUID OIL
UNITED STATES PATENT OFFICE

Use NON-FLUID OIL on Spinning Rolls and Saddles and you will secure a substantial saving on the cost of roll coverings as NON-FLUID OIL will not crawl from boss or saddle bearings and oil soak top rolls like common oils.

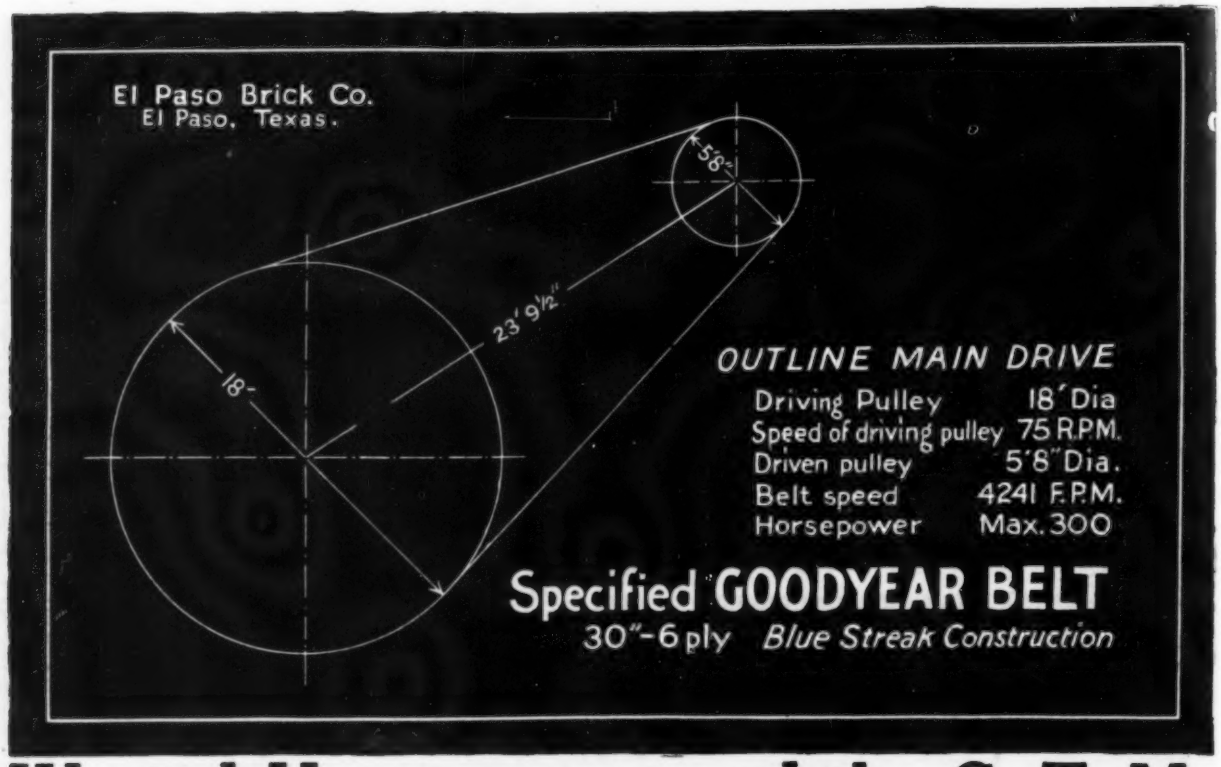
NON-FLUID OIL stays where put until it is entirely used up—giving positive lubrication all the time and outlasting liquid oils 3 to 5 times.

Send for our book on the "Lubrication of Textile Machinery." It will show you how to get better lubrication for less money—Testing samples are free for the asking.

New York & New Jersey Lubricant Company

165 Broadway NEW YORK

Branches: Atlanta, Ga., Charlotte, N. C.
Lewis W. Thomason, District Mgr., Charlotte, N. C.



Wasted Horsepower—and the G. T. M.

It was a spendthrift of power and a trouble-maker of the first class, that main-drive in the El Paso Brick Company's plant. Some years ago it was all right, but as the company grew it got worse and worse. Every kind and many grades of belt were tried on it. They slipped and jumped and stretched. They wasted horsepower-hours by the hundred. Most of them lasted only four or six months. The most expensive ran their unreliable way for about a year. They made that main-drive one of the most costly things in the plant. Finally the manager, Mr. Rodgers, asked a G. T. M.—Goodyear Technical Man—to call.

The G. T. M.—our Mr. Watson—was told by Mr. Rodgers that it was planned to try out an 18-inch 8-ply Goodyear Belt of Blue Streak construction, but that it would be a good thing to look over the drive first. The G. T. M. thought it would be a good thing to *study* the drive—so they went and looked and measured.

There was 300 horsepower coming off a fly wheel with a 40-inch face and intended for delivery to a shaft-pulley *with an 18-inch face.* But 105 of the 300 were being wasted by slippage, because that line-shaft pulley-face hadn't grown with the plant.

The G. T. M. recommended to Mr. Rodgers that he put on a line-shaft pulley with a face to take a 30-inch belt, specified a 30-inch 6-ply Blue Streak, stated his reasons, and was told to go ahead. He did. The belt and the new pulley were installed in April, 1918, and that main-drive has been a joy ever since.

From the first more than 100 of the 105 horsepower formerly wasted has been saved. The belt runs with perfect smoothness and evenness. And it costs much less than those that used to slip, stretch and break under overload, and waste a thousand horsepower-hours in an ordinary working day. And in Mr. Rodgers' judgment the Goodyear Belt is good for several more years.

There are many main-drives for which a G. T. M. can do similar things—main-drives still belted according to precedent instead of in accordance with the real conditions. Not all of them have outgrown pulley-faces, but many have; and scores of others are using belts of the wrong construction, others have belts made of materials that require such extraordinary tightening that they are hard on bearings, cause shafting to weave, and waste power and time in many other ways.

Ask a G. T. M. to look over your main-drive. He will call when next he is in your vicinity. He may find it all right—and if it is, he will tell you so. If it isn't, and he recommends certain changes, you are in no way obligated to carry them out unless his reasons convince you.

BELTING · PACKING HOSE · VALVES

GOODYEAR

AKRON

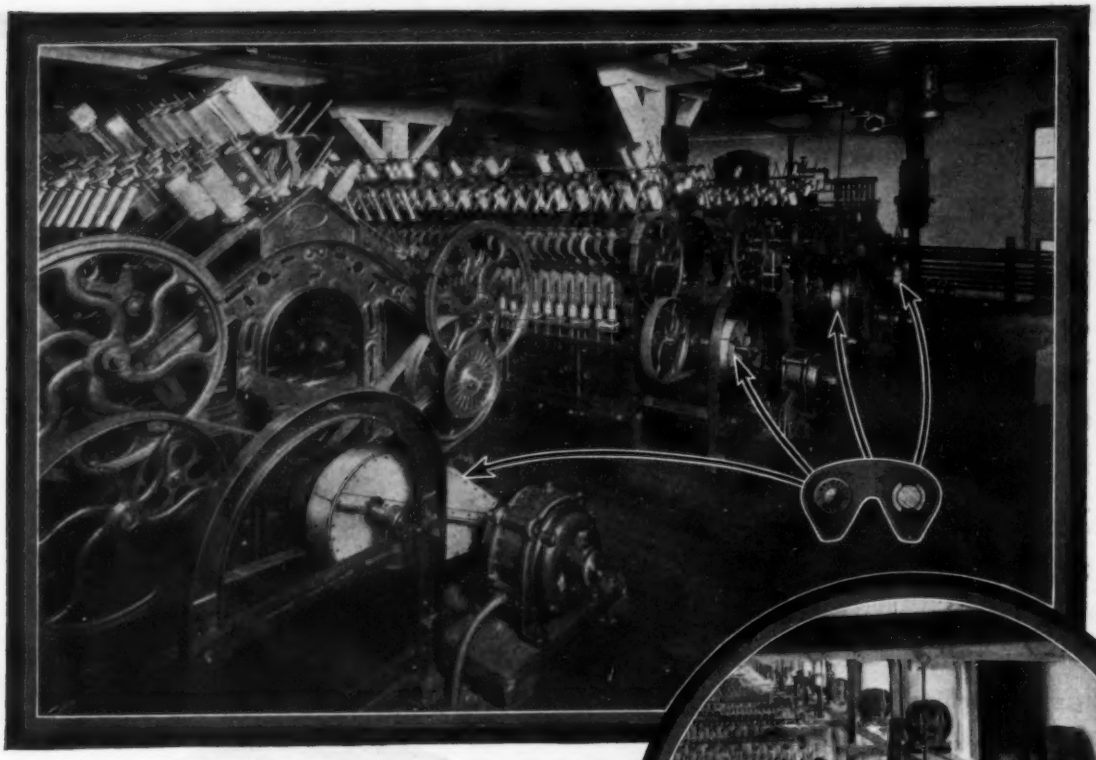
Strom BEARINGS

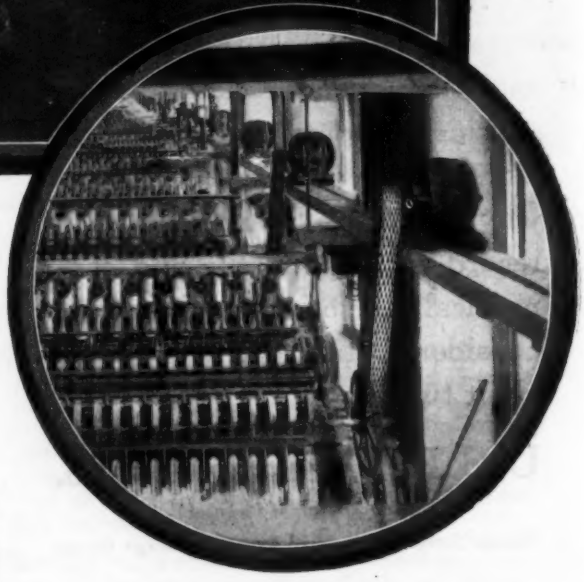
EXPERIENCE. The war's demands upon the machine shops of America proved a valuable experience. They made strikingly apparent the worth of high grade equipment. This is why Strom Bearings with their record for dependable and economical performance are now considered standard wherever a shaft turns.

U. S. Ball Bearing Mfg Co.

(Conrad Patent Licensee)

Palmer Street and Kolmar Avenue, Chicago Illinois





Silent Chain Drives Mean Better Products

THEY positively eliminate all slippage. The power is applied positively but gently. For the flexibility of Link-Belt Silent Chain absorbs all shock. The number of broken threads are reduced. This not only betters the product but adds to the life of the driven machine.

Repeated tests have proven Link-Belt Silent Chain Drives 98.2% efficient. They are "flexible as a belt, positive as a gear, more efficient than either".

Write for our Textile Drive Book No. 258.

LINK-BELT COMPANY

PHILADELPHIA CHICAGO INDIANAPOLIS

BOSTON - - - 49 Federal Street

J. S. Cothran, Southern Agent, Commercial Bank Bldg., Charlotte, N. C.

OTHER OFFICES IN PRINCIPAL CITIES

228

We Also Make

- ☐ Elevators and Conveyors
- ☐ Link-Belt and Sprockets
- ☐ Silent Chain Drives
- ☐ Truck and Tractor Chains
- ☐ Electric Hoists
- ☐ Locomotive Cranes
- ☐ Wagon Loaders
- ☐ Coal and Ashes Systems

Write for Catalogs
Place X in Square

LINK-BELT
SILENT CHAIN DRIVES

ONEIDA

A good steel pulley Dodge - built and guaranteed

There are probably several places in your factory where steel pulleys will give you better satisfaction and service than pulleys of either iron or wood.

Here are four reasons why you should put Oneida Steel pulleys in these places.

Belt contact on oval and angle crowns

First reason

The Oneida has a grooveless, oval crown. A belt naturally conforms to an oval surface. It requires tension to make it conform to an angle surface. A groove through the center of a pulley reduces the area of belt contact.

Oneida Steel Pulleys transmit power at lowest belt tension, therefore, at least bearing friction, lowest power cost and least strain on belts and equipment.

Strength from double arms

Second reason

Double arms are used in Oneida Pulleys beginning with 8" face in small sizes, 10" face in medium sizes, and 12" face in large sizes. Other steel pulleys use double arms only when the face width reaches 18 inches.

Interwoven hub and arms Malleable iron yoke

Third reason

The stress at the hub of a pulley is from four to twenty times as great as it is at the rim. This is because the arms act as levers and the hub is at the short end of the lever.

Oneida hubs and arms are interwoven and in the larger sizes, a malleable iron reinforcing yoke is used.

Fourth reason

In all the larger sizes of Oneida Pulleys, a steel plate is used at the junction of arm and rim. This affords an extra rim reinforcement and allows for the use of larger and stronger rivets. All metals through which rivets pass are countersunk. This eliminates shearing strain.

Rim plates and Interlocked metals

The Oneida dealer in your locality is a good man to know. He will give you service to the utmost of his ability. That's why he has the Oneida line. Ask us his name -- we prefer to receive your order through him.

Dodge Sales and Engineering Company

Distributor of the Products of the Dodge Manufacturing Company

General Offices and Works: Mishawaka, Indiana

● Dodge Branch Warehouses

Chicago New York Philadelphia Boston Cincinnati Pittsburgh
St. Louis Minneapolis Atlanta Newark, N. J. Providence, R. I. Seattle

"TURTLE" Leather Belting

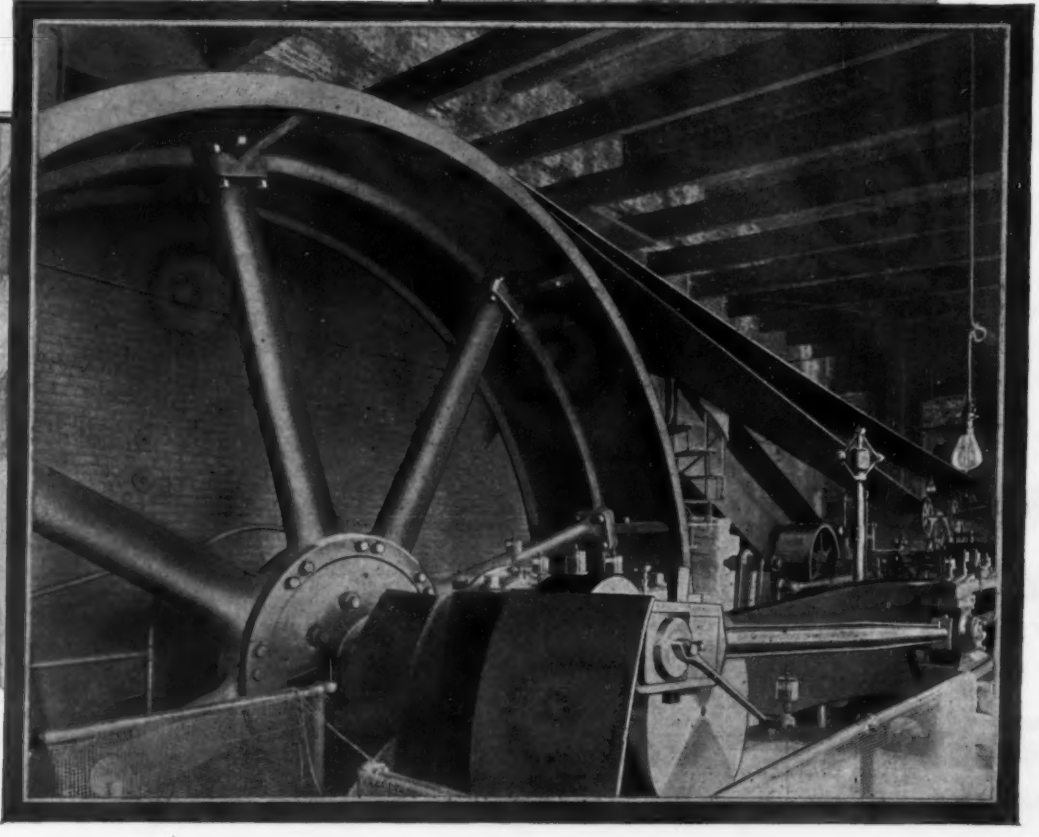
18 Years of Continuous Service

The Ladew Leather Belt on this tandem drive, 30-inch double, carried its load of 1000 H. P. day and night for 18 years, driving four other 30-inch double belts to four different factories. An accident destroyed it. But the service it had rendered caused it to be replaced by another Ladew Belt—which was built, delivered and carrying its load within 24 hours after the order was received, thus preventing heavy losses by a prolonged shut-down. Serviceability and service.

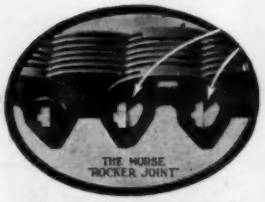
"Ladew"--"Dependability--"Synonyms

EDW. R. LADEW CO., INC.
GLEN COVE, NEW YORK, U.S.A.

Since 1835



The Sign of Efficiency



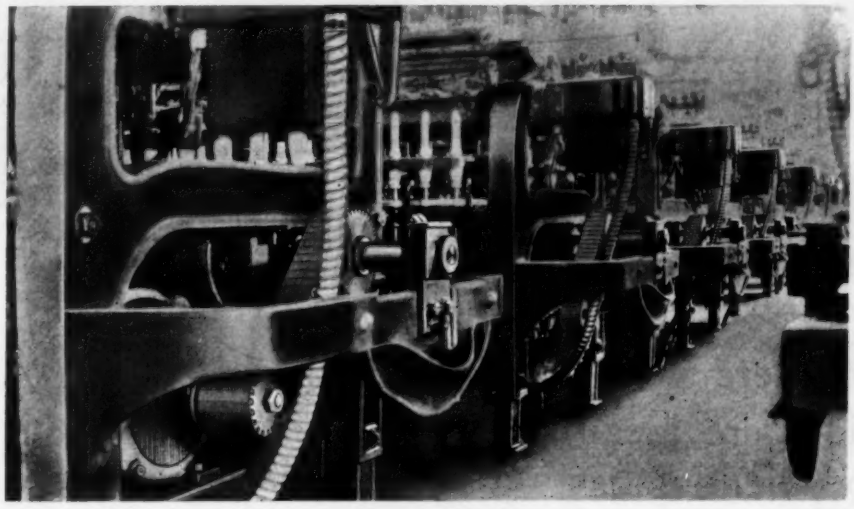
The Sign of Durability

Flexible as a Belt

Positive as Gears

Oil Bath not required

THE RELIABLE TEXTILE DRIVE



MORSE Silent Chain Drives, Necronsett Mills.

Replacing leather belts in every branch of the textile trade.

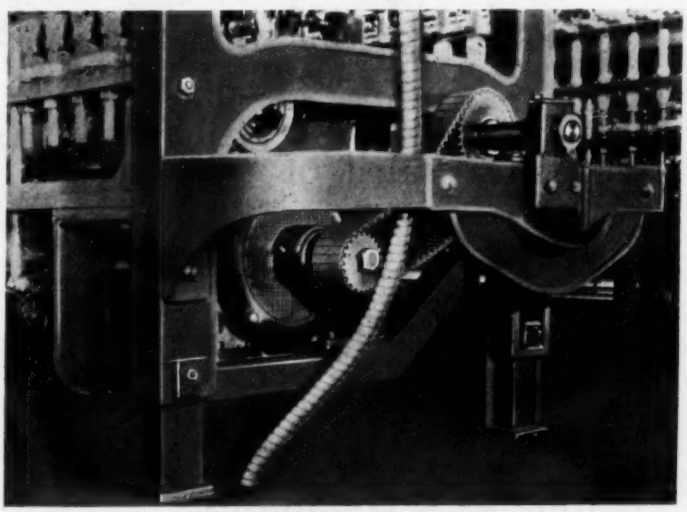
You cannot afford to depend on slipping, short life, wasteful belts. Textile machines can hold their output only when drives are reliable.

MORSE DRIVES give steady, clean service.

Notice, in mills equipped with Morse Silent Chain Drives, the light, the silence, the cleanliness, the wholesome sweet air. Observe the neat and healthy, happy appearance of all employees.

MORSE Engineering Service

Writing History in increased production and low cost. Confer with our experts relative DRIVES that may require speeding up, or increase power, or for special service in dust, gases, acid fumes, etc. When belts are giving trouble call on MORSE.



Corley Support, Necronsett Mills.

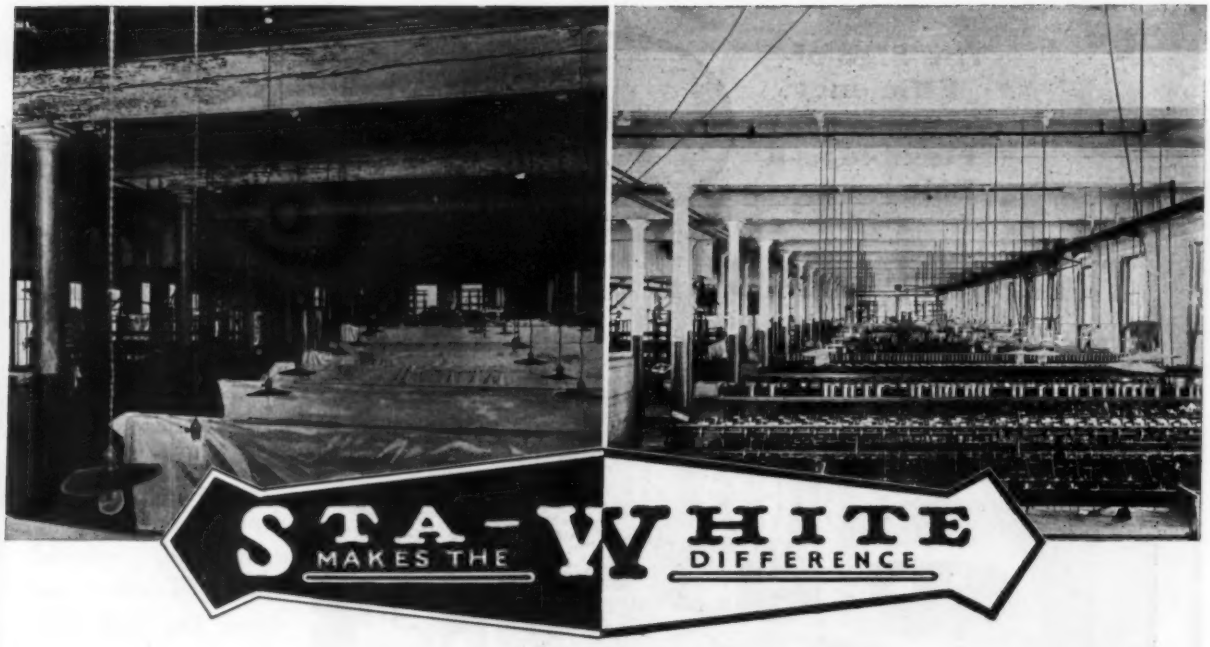
MORSE CHAIN CO. Largest Manufacturers of Silent Chains in the World **ITHACA, N. Y.**

MORSE ENGINEERING SERVICE **ASSISTANCE WITHOUT OBLIGATION.**

Address Nearest Office

BOSTON MASS.....141 Milk Street
CHICAGO, ILL.....Merchants Loan and Trust Bldg.
CLEVELAND, OHIO.....Engineers Bldg.
DETROIT, MICH.....1003 Woodward Avenue
GREENSBORO, N. C.....805 Ashboro Street
NEW YORK CITY.....50 Church St., Hudson Term. Bldg.
PITTSBURGH, PA.....Westinghouse Bldg.
SAN FRANCISCO, CAL.....Monadnock Bldg.
ATLANTA GA.....Earl F. Scott, M. E., 702 Candler Bldg.
CANADA.....Jones & Glassco, Regis'd. Montreal, St. Nicholas Bldg. Toronto, Bank of Hamilton Bldg.
KANSAS CITY, MO.....Morse Engineering Co., R. A. Long Bldg.
MINNEAPOLIS, MINN.....Strong-Scott Mfg. Co. 413 Third St.
ST. LOUIS, MO.....Morse Engineering Co. Chemical Bldg.

Morse is the guarantee always behind our Efficiency, Durability and Service



IN the plant where working conditions are ideal —where good lighting is an outstanding feature, the stage is set for maximum results.

A better spirit of cooperation and interest always prevails.

It's a worthwhile investment to stimulate the interest of your employees by creating ideal conditions.

Paint your walls and ceilings with Sta-White---the pure white oil paint for industrial interiors. Its use means improved lighting throughout the entire operation. Its high quality proven in service means a lower per year painting cost.

When you paint it will pay you to remember Sta-White.

Detroit Graphite Company

Makers of

Paints in all Colors for all Purposes

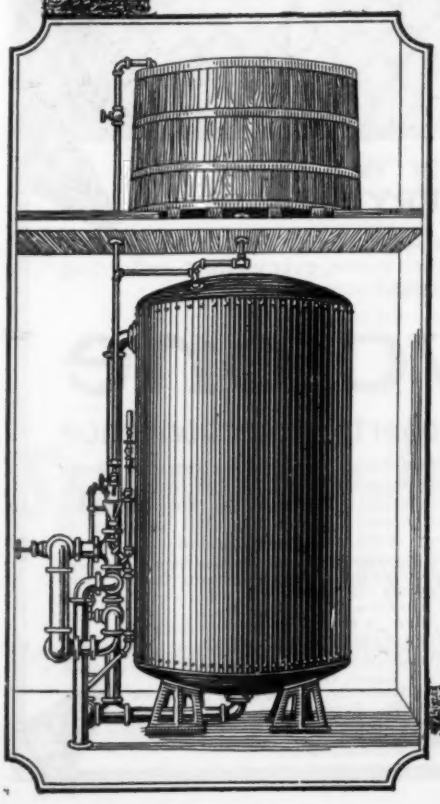
107 12th Street,

Detroit, U. S. A.

Permutit

Water Rectification Systems

FORGET, for the moment, the cost of a water softener. Think, instead, of **the cost of hard water.** What are the hard water costs in your plant—measured by lost values in spoiled goods, poorly matched shades, imperfect colors, excessive quantities of soaps and dyes, high fuel consumption, labor wastefully used in defective processes? Figure it all out—and there's every probability that these lost values, in a year, total far more than the cost of installing, operating and maintaining a water softening plant. Then the question becomes—which water softener to use? And the answer is—**the softener that uniformly gives the softest water at the lowest cost over the longest period.**



You Need "Permutit"

First—because **"Permutit"** is guaranteed to produce "zero-water" regardless of the original conditions.

Second—because **"Permutit"** uniformly produces "zero-water."

Third—because **"Permutit"** produces "zerowater" at the lowest cost, all cost items included.

Fourth—because experience has proved that the savings which **"Permutit"** brings about return 50 to 100 per cent annually on the investment.

Let a **"Permutit"** *engineer confer with you and submit a concrete proposition covering your conditions.*

The Permutit Company

Water Rectification

440 Fourth Avenue, New York City

"PERMUTIT" Zeolite Water Softeners
"PERMUTIT" Lime-Soda Water Softeners
"PERMUTIT" Heater Softeners
"PERMUTIT" Iron Removal Apparatus
"PERMUTIT" Oil Removal Filters
"PERMUTIT" Filters.

16

"ON WATCH" EVERY MINUTE

Never runs down, never loses a minute; many watchmen in one, ever vigilant—affording absolute day-and-night security.

Cyclone Property Protection Fence

Chain Link woven steel fabric, of high-grade galvanized steel wire; heavy full-weight tubular steel posts with pressed steel arms carrying three or five barb wires firmly locked. Cyclone Fence is designed for the protection of industrial property of every description.

Whatever your fencing problem may be, it can be solved by our engineers. Advisory service free. Illustrated catalog showing many Cyclone Fence installations sent free on request.

Phone, wire or write main offices at Waukegan, Illinois, or branch offices nearest you.

CYCLONE FENCE COMPANY

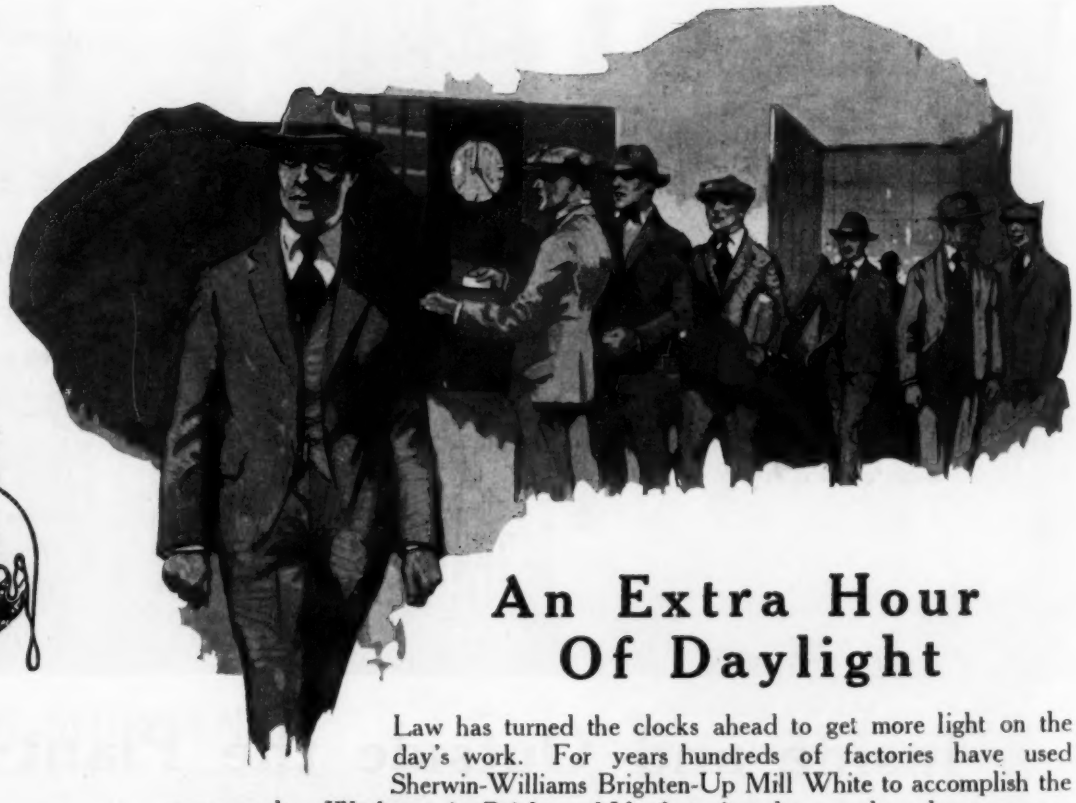
Factories: Waukegan, Illinois Cleveland, Ohio

Branch Offices:

Chicago, Detroit, Rochester, Philadelphia, New York City, Oakland, Calif. Portland, Ore. San Francisco

OTHER CYCLONE PRODUCTS ARE:

Chain Link Fence Interior Partition Work Flexible Steel Mats
Conveyor Wire Belting Window & Skylight Guards Industrial Housing Fence
Wire Work of all kinds



An Extra Hour Of Daylight

Law has turned the clocks ahead to get more light on the day's work. For years hundreds of factories have used Sherwin-Williams Brighten-Up Mill White to accomplish the same result. Workmen in Brightened-Up factories, shops and work rooms produce more work of finer quality with less inspection, spoilage and breakage at lower cost.

Getting Daylight Inside

Sherwin-Williams Brighten-Up Mill White diffuses full natural light evenly over work and workmen. On night shifts it cuts lighting bills and keeps production up; protects the workmen's eyes against strain and insures the owner against material losses.

Sherwin-Williams Brighten-Up Mill White is less expensive than dark walls or cheap white paints. Like all Sherwin-Williams products it is fully guaranteed. It flows smoothly, brushes out evenly, covers more square feet per gallon than ordinary white paints. It retains its whiteness through years of use without yellowing or greying. It washes easily, is impervious to steam, oils and gases.

Use Sherwin-Williams Brighten-Up Mill White on your factory walls for the full extra hour of daylight that it gives.

THE SHERWIN-WILLIAMS CO.

No. 806 Canal Rd., Cleveland, Ohio.

Branch Offices and Warehouses in all important cities

SHERWIN-WILLIAMS PRODUCTS

PAINTS AND VARNISHES

DYESTUFFS, COLORS, PIGMENTS, CHEMICALS, INSECTICIDES,

DISINFECTANTS, WOOD PRESERVATIVES

Inside and Outside the Plant—

PAGE
WIRE-LINK FABRIC

has a score of uses. It provides the ideal exterior fencing—sturdy, unclimbable and effective both against the depredations of petty thieves and the attack of misguided agitators.

For interior partitions, machinery and belt guards, stock-room enclosures and window protection, it offers perfect protection without obstructing light.

Page Wire-link Fabric is the supreme product of over a generation of experience. It can, if desired, be supplied from Armco (American Ingot) iron made in our mills from billets produced especially for us by the American Rolling Mill Company of Middletown, Ohio. We possess the sole right to the use of this famous rust-resisting iron in wire and wire products.

Other PAGE Quality Products

Special Analysis Wire
Armco Iron Welding Wire
Galvanized Wire
Wire Mill Products
Woven Wire Farm Fence
Wire Lawn Fence
Ornamental Iron Fence
Architectural Iron
"Copperweld"—Copper Clad Steel Wire
Armco Iron Magnet Core Wire
Spring Wire
Rope Wire

Write Us Your Problems

Our Engineering Department at Adrian is anxious to co-operate with you in the solution of any problems of exterior or interior protection. This service is rendered without obligation on your part. Simply write and give us full details.

PAGE STEEL & WIRE COMPANY

Formerly Page Woven Wire Fence Company

Established 1883

ADRIAN, MICHIGAN *Factories* MONESSEN, PENNA.

Branches: New York, 30 Church Street; Pittsburgh, 644 Union Arcade; Detroit, 1147 Book Building; Chicago, 175 W. Jackson Boulevard

Industrial Housing

QUICK SHIPMENT

A Train Load of ALADDIN Houses Per Day

Depending upon size of house, we load from one to three complete houses in each car. Normally, shipments arrive at Atlantic Coast points in about six days after leaving our mill.

QUICK RESULTS

A Gang of 120 Men Can Erect 10 ALADDIN 5-Room Houses Per Day

Aladdin Houses are Readi-Cut. Every piece of material, joists, studs, rafters, sheathing, siding, flooring, interior finish, is cut to proper size, marked and numbered and ready to nail in place.

SERVICE PLUS

Immediate Action on Any City Project—or Any Housing Problem

Our plans are drawn, prepared and finished for cities of from 300 to 3,000 poulation. Experienced town planners, landscape achitects, engineers and builders have spent months of study and work in their production. This service becomes a part of every Aladdin Housing transaction—a single house or a complete city.

Over One Thousand ALADDIN Houses Carried in Stock

All lumber, shingles, lath, millwork, siding, flooring, interior finish, plaster, hardware, paints, nails, are carried constantly in stock, ready for instant shipment.

Hundreds of American Corporations Have Built ALADDIN Houses

As many as five hundred Aladdin houses have been sold to a single corporation. Re-orders are constantly received from corporations who have tested our houses by actual purchase and erection.

A Single House—or A Complete City

The Aladdin Company will quote you a definite price on a single house or complete cities of 300, 500, 600, 1,000, 1,500 and 3,000 population. These cities are now listed in our book on Industrial Houses. Cities include homes, stores, churches, schools municipal buildings, water distributing systems, electric light plants and distribution, sewerage systems, trees, etc. "Book of Aladdin Homes" No. 620 with full information, floor plans and prices will be mailed on request. Aladdin Book "Industrial Housing" mailed only to inquiries written on business or official stationery.

Complete Cities

-or a Single House

The Aladdin Co.

621 SOVEREIGN AVE., HOME BUILDERS TO THE NATION TOWNBUILDERS TO THE NATION HATTIESBURG, MISS.

Get the "Cloth" You Really Want

CIRCUMSTANCES may compel you to accept a "ready-made" building instead of one designed to fit your needs.

But that does not compel you to accept substitute sash as well! Your factory does not shut down when it rains: why should you shut down the air supply by using monitor sash, which must be closed with every shower?

Pond CONTINUOUS SASH

PATENTED
WEATHER-PROOF WHEN OPEN

can stay open, rain or shine, without danger of water damaging goods or machinery. It is built expressly for weatherproof ventilation, and was the pioneer sash of its type.

You needn't delay construction a day. We furnish Pond Continuous Sash from warehouse stock in Philadelphia, Cleveland and Detroit.

By specifying it when you order the building, you get:

Greatest width and ease of opening;

Greatest strength and glass protection;

Greatest resistance to corrosion;

Fewest operating stations on long lines.

The *cut* of the suit may have to be ready-made;
but you can choose the *material* you really want!

DAVID LUPTON'S SONS COMPANY
Amber St. & Allegheny Ave., Philadelphia, Pa.

Makers of Modern Equipment for Daylighting and Natural Ventilation

Canadian Manufacturers:
The A. B. Ormsby Co., Ltd., Toronto

Upper circle: Hinge suspension; cannot clog, with dirt or ice; no pocketed condensation to cause corrosion.
Lower circle: Patented Sill Member. Drip holes avoid pocketed water without putty; opposite flanges take thrust of operator without strain on glass.
Lupton
INVESTMENT VALUE

"DIXIELITE"

The Original Daylight Saver

Dixielite was on the job saving daylight in factories, mills and warehouses long before anyone thought seriously about turning the clock forward an hour.

Dixielite is a perfected white enamel finish for walls and ceilings. It brightens up the inside of a workroom like the sun brightens up things after a storm.

Put this Daylight Saver to work in *your* mill. After the first cost of putting it on the walls and ceilings, it never costs you another cent. It never goes on strike —never demands any of the profits it makes for you—is always on the job harnessing the good old daylight and reflecting it all over the workroom.

You know how a clean window transmits so much more light than a dirty one. So it is with wood-work painted with Dixielite. All the daylight that comes in the windows is utilized. It is evenly distributed. As a consequence the operatives work better and faster. They work under more hygienic conditions. Their eyes are saved. They are more contented. There are fewer accidents. And besides, you're saving money all the time in light bills.

May we send you a sample of Dixielite — absolutely free? Write today and begin conserving daylight in *your* mill.

Made in gloss, semi-gloss and flat finish.

WADSWORTH, HOWLAND & COMPANY, Inc.

139-141 Federal St. ***Makers of Bay State Briand Cement Coatings*** **Boston, Mass.**

Ware-Smith Paint Co., Agents for Georgia, 3rd Floor Forsyth Bldg., Atlanta, Ga.

W. A. Williams, Southern Representative, P. O. Box 332, Greenville, S. C.

Kaustine Waterless Toilet Equipment

Brings Health and Contentment to Your Workers

There is nothing working people appreciate more than modern, indoor toilet conveniences. They know that the old-fashioned, disease-breeding outhouse is a menace to their health and that it should not be tolerated. You, too, must appreciate that the health and comfort of your workers are closely related to your success.

Provide sanitary toilet facilities for your employees—in the mill and in the home. Let them know that you are interested in their welfare.

By adopting the Kaustine System for your mills, camps and villages, you secure perfect sanitary sewage disposal without going to the expense of installing water works, sewers, cesspools, etc. The Kaustine System is complete and scientific in every respect and is guaranteed to provide every convenience of the city water closet at considerably less cost.

Kaustine Toilets require neither water nor sewer connection. The designers of the Kaustine System have overcome the problem of sewerage connection by providing Kaustine, a powerful resolvent and germicide. This chemical substance, placed in the Armco tank beneath toilet, disintegrates all waste matter, rendering it harmless and odorless. The entire system is ventilated thoroughly by positive air currents.

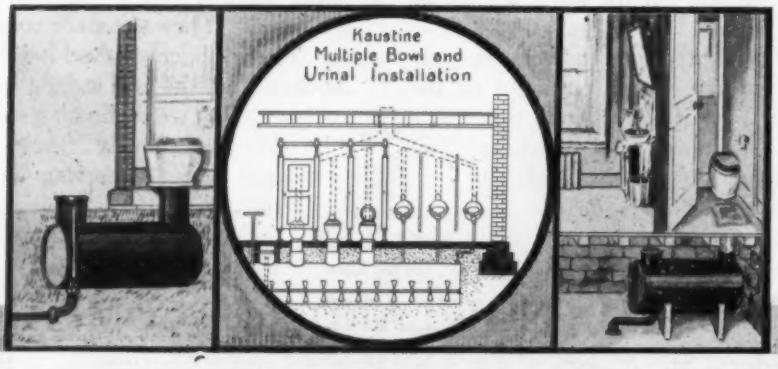
Kaustine Toilets are adaptable to any type of building and may be had in single or multiple units. The Kaustine System is endorsed by health authorities everywhere and is widely used in cotton mills and villages, unsewered manufacturing plants, rural schools, saw mills, and in fact wherever sanitation and health are valued in unsewered districts.

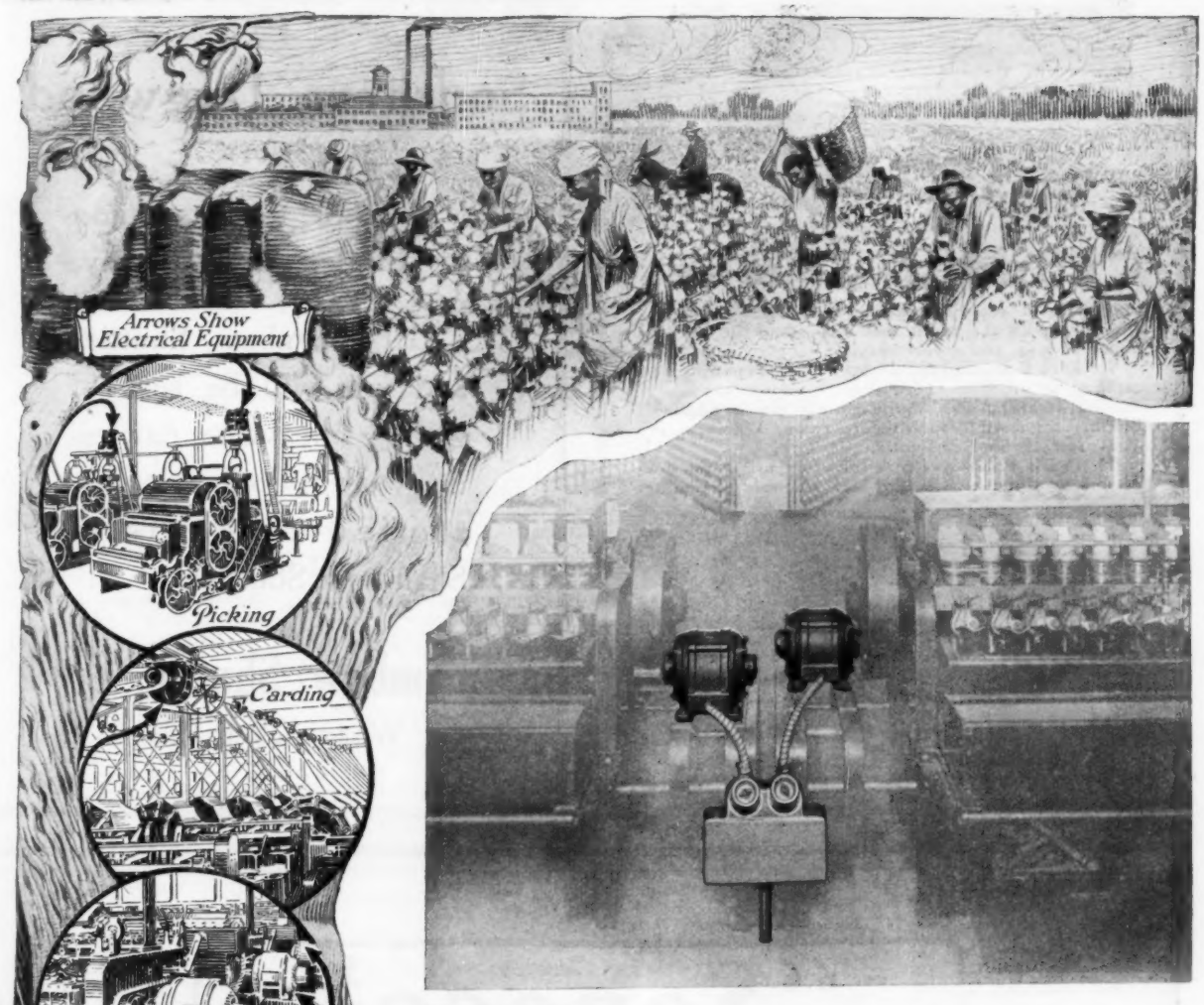
Consult Our Engineers

Write to our Engineers for plans. They have successfully planned systems for industrial villages and manufacturing plants throughout the country. We handle the job from beginning to end and guarantee results—or will work with any contractor.

KAUSTINE COMPANY, Inc.

A. M. Whelpley, Sales Manager, 428 Candler Bldg., Atlanta, Ga.





G-E Motor Driven Spoolers, Dunean Mills, Greenville, S. C.

Electric Power Insures Continuity of Operation

Electric power, properly generated and applied by G-E equipment, assures ideal power conditions for maximum production of highest quality throughout textile mills. It assures these conditions at least power cost.

With individual G-E motor drive in your spinning room an accident to one motor would interrupt only a very small part of the production for a short time until a spare motor could be placed in sevice.

The indestructible windings of these motors, their fans which assure positive motor ventilation, the waste-packed bearings that require minimum attention and use least oil without leaking, the extra heavy shafts and the automatic control, all contribute to assure continuity of operation and, therefore, maximum production.

The high efficiency of these special spinning motors assures most product at least electric power cost. Their high power factor reduces to the lowest point the necessary investment at the power station.

Our experts will be pleased to show you many other reasons why you should use these specially designed textile motors which have been standardized to satisfy all textile drive demands.

44-8

Principal Office: Schenectady, N. Y.
Mill Power Dept. Boston, Mass.

GENERAL ELECTRIC COMPANY

Card Cylinder Brush

FELCO

Cylinder Brushes

are made of superior quality materials by superior workmen with the result that they stand the use and abuse of long and severe service.

We have a department devoted to the repairing and refilling of brushes, and the same expert knowledge and workmanship used in the manufacture of FELTON BRUSHES goes into such repair work. We can serve you promptly and efficiently.

There is a FELTON Brush for every use at the lowest price consistent with the high standard of quality.

Comber Cylinder Brush

Write for prices on any new brush you desire, or brush repair work

D. D. Felton Brush Co., Atlanta, Ga.

S. A. Felton & Sons Co., Manchester, N. H.

Manufacturers and Repairers of all Kinds of Brushes.

Southern Dogwood

is superior to persimmon for shuttles. Ask us why.

Get Shambow Shuttles and you will be sure of getting full value, flawless dogwood billets. No stuffed-up knots in Shambow Shuttles.

Shambow Shuttle Co.

Woonsocket, R. I.

"Sonoco"

"Yarnsaver"

Our round-nose "Knit-all" Cone

Like all "Sonocones," every one Fits

100% Fit!

Means 100% Satisfaction from "Sonoco" Cones, Cores and Parallel Tubes

Short Freight Hauls, Quick Deliveries, True Weight and Taper=Saving to You

Southern Novelty Co., Manufacturers, Hartsville, S. C.

COTTON

Published Monthly by

W. R. C. Smith Publishing Co., Dalton and Atlanta, Ga.

L. L. ARNOLD, Editor.

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Orders for any change in advertising must reach Atlanta previous to the tenth of the month preceding month of issue, otherwise publishers cannot be responsible for changes.

When changing address, notify us, not the postmaster. Always give the old address as well as the new one.

Member Associated Business Papers, Inc.

Member Audit Bureau of Circulation.

This Issue 5000 Copies.

Volume 83. Number 8.

WE'RE OFF AGAIN.

Full of cheer and that optimistic American spirit.

Peace-time industries must soon be going full swing—speeding up for delayed peace necessities and luxuries, creating a job for every home-coming fighter, reabsorbing every loyal munition worker.

Now's the time. Start things going. Buy what you need. Start buying and selling all along the line.

If you buy, you deplete the goods of the merchant and he must buy, and he in turn depletes the surplus stock of the manufacturer, who thus is forced to buy more raw materials, produce more goods, employing more workmen.

BUY NOW—Start the ball a-rolling, headed for prosperity— *LET'S GO! BUY NOW!*

U. S. DEPARTMENT OF LABOR

W. B. Wilson, Secretary.

Roger W. Babson, Director General, Information and Education Service.

KEEPING YOUR PRODUCTS BEFORE THE BUYERS.

The executive of a Southern mill recently requested of us the name and address of a manufacturer of a textile machine exhibited at the Sixth National Textile Exposition in New York City over a year ago. He was interested in buying a number of the machines for his mill, but had neither the name or the address of the manufacturer.

No doubt there are other cotton mill executive who were likewise attracted by this exhibit and who would install the machinery if they were in some way kept reminded of its practicability, and the manufacturers made it easy for the mills to get in touch with them.

Regular consistent advertising does just this for you. It keeps the value of your products or service constantly before such possible customers, as well as creating interest among new buyers. It makes the buying of your products easy and your sales correspondingly larger.

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ADVICE OF A SALESMAN.

Road men are in closest touch with the customers and possible customers. Executives sit in offices, read reports and plan campaigns. Some of them get into the field now and then, but few of them come into intimate contact with the buyers that the road men and representatives reach.

Sales campaigns are ticklish things to plan and handle. Then too their success hangs on the work of the road men.

Some companies would do well to consult their representatives oftener regarding sales plans. Road men would feel in closer touch with the house, would attain an increased importance and would relish an opportunity to get off their chests some of the sales ideas they are nursing.

Every road man worth his salt believes that he is a potential sales manager. Consulting such men will build morale and give them a feeling of responsibility productive of greater effort.

PERHAPS WE CAN GIVE YOU THE INFORMATION.

From the executive of a Central Western cotton yarn and knitting mill:—

"Will you kindly give me the name of the firms who manufacture automatic stripping devices for revolving flat cards.

"Do you know of a firm that manufactures endless rope bands for cards?"

From a Southern cotton mill:

"Please advise if there are long chain warpers made by any other firm than the three listed below."

Each week we receive many such inquiries from readers of COTTON. We are glad to be of assistance. If we don't have the desired information at hand we can quickly secure it.

Let us help you find the manufacturer of the machinery or supplies you need. Look first through the advertising pages of COTTON; if your want is not advertised, write us.

This Paint Is Cheapest in the End

A paint, like Dixon's Silica-Graphite Paint, gives better protection, for a longer period of time than ordinary paint. That's one reason.

The longer the paint lasts the less often you have to employ painters. This, perhaps, is the greatest advantage you derive from using a high grade paint. For the biggest item of expense in any painting job is the labor.

So there is a double economy resulting from the use of

DIXON'S SILICA-GRAPHITE PAINT

Thorough-going protection for all metal work, smokestacks included, and an enormous saving in the labor-cost for painting. This paint has some remarkable records of long service to its credit. It is being used exclusively in all parts of the world and in all industries.

Write for Booklet No. 34-B and see how much better satisfied you will be by using Dixon's Silica-Graphite Paint.

Made in JERSEY CITY, N. J., by the

JOSEPH DIXON CRUCIBLE CO.

ESTABLISHED 1827.

SETTEES

AND SWINGS FOR PLAYGROUNDS and PARKS

LOW PRICES QUICK SHIPMENTS

We also manufacture Wire and Iron Window Guards, Stall Guards, Hay Racks, Oat Mangers, Etc.

DOW WIRE & IRON WORKS
INCORPORATED
LOUISVILLE, KY.

JORDAN MANUFACTURING CO.

BOBBIN MAKERS

Home Office and Plant No. 1

MONTICELLO, GEORGIA.

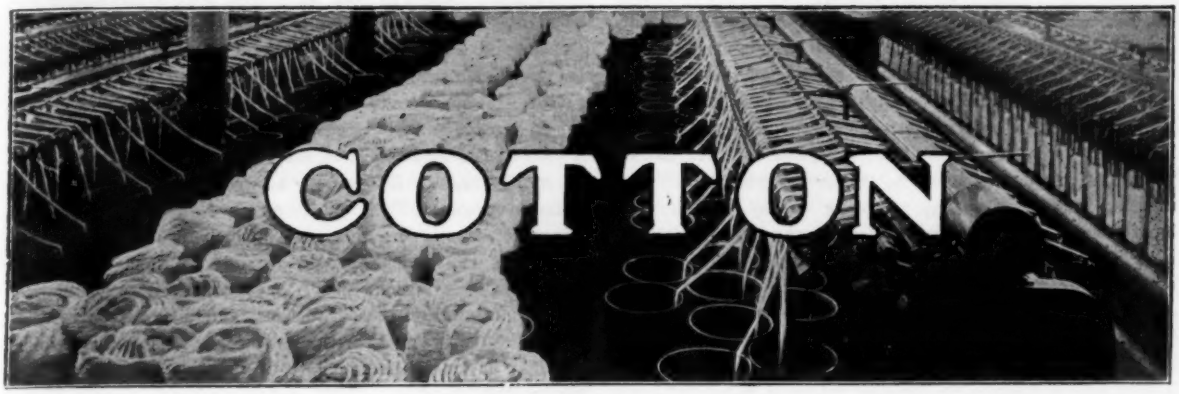
GARLAND

LOOM HARNESSES

Have the loops filled with varnish so that the eyes cannot break back or work loose. They are as solid as the best varnish can make them and remain in this condition until the harness is worn out.

TRADE MARK

GARLAND MFG. CO.
SACO, MAINE



June, Nineteen-Nineteen

A Difference of Opinion.

Professor Everett H. Hinckley of the New Bedford Textile School has been preparing a series of articles on slashing cotton warps. In one of these articles, which was printed in COTTON for March, 1919, the following paragraph appears:

> "Of the starches available good practice dictates that corn is suitable for coarse yarns and potato for fine yarns. In place of potato, thin boiling corn starches or tapioca starch may be used. Commercial starches are offered on the market in a high state of purity. The amount of moisture they contain is very important and varies greatly with weather conditions. It will vary so much that mixtures *made carefully by weight do not give uniform results.* On one day 100 pounds of starch may contain 12 pounds of water, and starch taken from the same barrel the next day may carry 20 pounds of water in each 100 pounds taken. A simple and practical way of meeting this difficulty is to *measure the starch by volume instead of by weight,* thus the selection of the starch is not difficult."

The italics in the foregoing paragraph are ours.

In another part of this issue appears a paper presented before the Southern Textile Association at Greenville last month by P. W. Allen, M. S., in charge of the Research Laboratories of the Douglas Company at Cedar Rapids, Iowa, in which he says:

> "All the pains and expensive control apparatus used by the manufacturers of a modified starch is lost effort unless there is also in the textile mills equal control over the preparation of sizing. * * * * *Weighing all ingredients instead of measuring them by volume gives control over the effect of different proportions.*"

Again the italics are ours.

At the Southern Textile Exposition at Greenville last month, William R. Catheart, Ph. D., technical director of the textile department of the Corn Products Refining Company, New York, presented a hand book to visiting mill men entitled "Sizing Hints for the Practical Slasher-man." bearing his name as the author. On pages four and five of this book he says:

> "The practice of measuring the starch by volume, in pails or other containers, should be discouraged and in fact prohibited. All starch should be *weighed.* Weighing alone will insure the accurate amount of starch in the mixture."

In this case the italics are Dr. Catheart's.

This is an important detail for textile men to settle definitely. COTTON will be glad to open its columns to any mill man who has made tests on this subject, as well as to the gentlemen quoted for a further exposition of the matter.

The Opportunity of a Generation.

Announcement recently of the proposed formation of a $10,000,000 corporation to promote trade between the South and Latin America has received most favorable comment throughout the entire southern section of the country. This means much to our cotton industry.

Southern ports bordering on the Gulf and the Atlantic have an opportunity to establish trade relations and trade routes to Hispanic America, which will put this section in closer touch with our neighbors to the south, and will not only promote closer trade relations but a more friendly understanding of one another.

Central and South Americans have been very much misunderstood by our people. The same is also true when the reverse is said. Insidious propaganda by our commercial competitors, particularly one nation that is at present out of the foreign markets, have done much to place us in a wrong light before the eyes of these people. They are Americans the same as ourselves, and why should not greater effort be made to cultivate them? It is a little peculiar we have not awakened to this long ago.

As far back as 1798 our early skippers were trading with the River Platte Nations, taking with them cotton goods for exchange. Our clipper ships were familiar figures in South American ports. In 1800 the vessel "Liberty" sailed from Montevideo, Uruguay, with a shipment of tallow, which is the first record of freight from that section in an American vessel. During the next few years, there is found record of many sailings from our Atlantic ports to the east coast of South America, each vessel carrying large quantities of cotton cloth of American manufacture.

In the succeeding years history has witnessed the rise and fall of American shipping; and now in this generation

we shall see the resurrection of a new American merchant marine, which bids fair to eclipse anything in the world's history. We hear many expressions of doubt as to our ability to compete with merchant marine of other nations that have been in active operation for many years, particular reference being made to British shipping. Edward N. Hurley in his report on the European Mission, stated: "For more than a generation, we have heard British seamanship and British ship-operating ability lauded. We have shared this admiration. But in our praise, we have been prone to ignore the advantages that lay on the side of the ships that flew the British flag. The truth is, that our friends across the water are, for the first time in many years, entering upon a period of actual competition."

The organization of this $10,000,000 corporation whose expressed purpose is to develop trade in the South and from southern ports to Central and South America, is a start in the right direction.

While the ports are building, it behooves the interior to awaken also. Our manufactures and agriculture have a wonderful opportunity. For the past ten years industry has made strides in the development of Latin America. One traveling through South and Central America finds, time and again, articles manufactured in our South. The native wears shirts and trousers made of American denims. In the stores we find toweling and ticking made in Georgia mills, while hosiery and underwear from all over the South can be found. In the July, 1918, issue of this magazine mention was made of a visit to the South by a gentleman from Uruguay. This gentleman had come to the States every three years to buy, but had never visited the South. At the solicitation of the Southern Railway, he made a trip through the South. The result was, he placed large orders. He was particularly impressed with the excellent advantages southern cotton mill people had in the port facilities of this section, which he thought should be more fully developed, and immediately.

Other articles of southern manufacture are found on one's travels along the coast and interior. In the interior one constantly sees plows with the word "Chattanooga" in glaring gold letters across their point; wagons from Winston-Salem and Louisville; bath tubs and fixtures with the names of prominent southern manufacturers on them, while windmills and water tanks—both of them innovations—display prominently the names of firms located in our southern states.

Our South Atlantic ports from Norfolk to Jacksonville have wonderful harbors for the handling of export business. The Gulf cities, Mobile, New Orleans and Galveston, are awakening to their opportunity. The railroads of the South are establishing low rates on manufactured articles to these ports, and are now planning rates from the ports to the interior, and there is no reason why Cincinnati, Louisville, Chicago and St. Louis should not know our ports as they do those of the East.

The establishment of boat lines is progressing at a wonderful pace. The Shipping Board is daily turning over vessels, quite a few of them for proposed lines from southern ports. From Gulf ports the United States has the short line route to West Coast points of South America via Panama Canal, and our Atlantic seaboard ports have direct routes to the East Coast of South America.

That South American nations want to enter into friendly relations with us, is attested by announcement of several commercial embassies that have been sent or are about to come to this country. The entry to this country via New Orleans of the Chilean Commercial Embasy meant much to the South. More than many realize. For years the South American countries have been in the habit of looking to Europe for all their trade and financial arrangements. This Chilean Embassy has for its purpose the promotion of more friendly intercourse between their own country and the States. Their reception in New Orleans was a most enthusiastic one and their journey through the southern states one which brought forcibly to them the possibilities of this region. They have promised to visit several of the larger southern cities, and elaborate arrangements are being made for the reception. It is such missions as this that mean so much to our section. They will be shown the resources of the region and it is hoped their impressions will be as favorable and lasting as those of past missions. It is announced a trade mission will soon arrive in this country from Bolivia also one from Peru.

The recent Foreign Trade Convention held at Chicago, showed the interest the South is taking in foreign trade development. An excellent representation from the South was in attendance, and much enthusiasm was manifested. The work of this body should be followed up, for the chance of a generation has come to southern cotton mill interests, as well as to all other southern manufacturers.

A New Cotton Association.

The Cotton Thread Manufacturers Exchange was organized in March at a meeting held at the Parker House, Boston, Mass., with an original membership of seventeen and has a present membership of twenty concerns. This membership will undoubtedly be increased within the next few weeks. The officers of the exchange are as follows: president, Herbert E. Locke, H. E. Locke & Co., Inc., 99 Chauncey Street, Boston, Mass.; vice-president, Francis S. Cobb, Seamans & Cobb, 140 Essex Street, Boston, Mass.; secretary-treasurer, Herbert S. Blake, 30 Church Street, New York City.

The general management of the exchange is vested in an executive committee, consisting of the officers above named together with C. E. Chaffin, Bay State Thread Co., Springfield, Mass.; L. B. Cranska, Cranska Thread Co., Moosup, Conn.; W. W. Orswell, Blodgett & Orswell, Pawtucket, R. I., and R. W. Poole, West End Thread Co., Boston, Mass.

The purposes of the exchange are to stimulate acquaintance and cordial relations amongst its members and throughout the trade; to improve the business standards of the cotton thread industry and to strive toward the correction, by all proper and legitimate means, of the abuses in the trade. Much has already been accomplished and more will rapidly be done to standardize conditions throughout the thread industry. Meetings of the exchange are held on the second Wednesday of each month. The business office of the exchange is at 30 Church Street, New York City.

D. Gleison, Chairman, Board of Managers, Industrial Divisions, General Motors Corporation, and Manager Industrial Bearings Division, Hyatt Roller Bearing Company, announces the appointment of P. C. Gunion as Advertising Manager, Industrial Divisions, General Motors Corporation.

National Association Meets at New York

The National Association of Cotton Manufacturers held the 106th annual meeting of the association at the Hotel Biltmore, New York, April 23rd, 24th and 25th. There was a large attendance of members and guests and the get-together smoker, which is a regular feature inaugurated by Secretary Wilson of the association, proved most attractive.

Wednesday Evening Session.

The first session of the convention was held in the music room of the Biltmore, and comprised the reading of the president's address by W. Frank Shove, the report of the secretary and treasurer, and the reports of the standing committees. In addressing this first session, President Shove said in part as follows:

Anyone essaying to address the representative and keenly intelligent body of men assembled in this room tonight, essays a task the difficulties of which may not be immediately apparent, but are none the less real. Trade prospects you know as much about as I do. Labor, the cotton market, the goods market, and so forth, are our general topics of conversation. So that, generally speaking, the choice of topics is circumscribed, and, within certain definite limits, most subjects have been so universally dealt with, hashed and re-hashed, discussed and re-discussed, that it would seem hardly anything new is left to be said. However, so far as in me lies, I will do my utmost to keep you interested; for the many faults it is possible for you to find I would crave your indulgence.

The year just closing has been one of the most strenuous in the history of our organization, and the duties developing upon the officers and the board of governors and upon the members of the various committees, have been exceedingly onerous. Twelve months ago we were in the midst of the world war and every effort had to be made by the textile, as well as other industries, in order to increase production of goods necessary for the successful prosecution of the war. During the months which have since elapsed, we have seen the armistice signed and witnessed a general demoralization of business. War contracts were cancelled in wholesale fashion and the general result on our industry was that the market for textiles dropped from the high points of 1918 to—in some cases—half the value. Meantime, manufacturer and merchant awaited developments. So great was the disruption of business that many manufacturers were forced to shut down. With very little reduction in material cost and no reduction in labor and overhead costs, there was no margin of profits in the prices offered—as a matter of fact many offers were considerably below the cost of production. At the present time business seems to have taken a very appreciable turn for the better and I do not see why we in the cotton industry should not soon be enjoying another period of prosperity.

The successful agitation by labor for a 48-hour week is also a distinctive feature of the past few months. It is beyond dispute that a shorter working day in the cotton factory reduces production and consequently raises costs; apart from that I have no objection to it. The one great evil from the point of view of the northern and eastern manufacturers is that the 48-hour week is not universal. Even the agitators themselves admit this evil, and unless the southern states adopt the same schedule of hours, then the present schedule in our territory is a most invidious arrangement, an arrangement which cannot fail to react unfavorably on the textile industry in this section of the United States.

The formidable bogey of the high cost of living does not seem to become any less formidable—in fact, in view of the general demand for shorter hours and increased wages, it seems to become more formidable. Quantity production and reduced costs are the two things which will bring the expense of subsistence down to reasonable limits, but the pity is it is so hard to explain this truth to the great mass of people and to convince them of the soundness of the argument. The present situation in regard to the cost of living is not of course, peculiar to any one nation—other nations have exactly the same difficulty to face.

President Shove then quoted from an address by W. A. Appleton, the English labor leader, on "Industrial Illu-

W. FRANK SHOVE, RE-ELECTED PRESIDENT.

sions" or "Misapprehensions," commenting as follows:

The first misapprehension he dealt with was that Capital qua Capital or Labor qua Labor, was value. Only when both were employed together was good achieved. Another misappreciation was that high wages necessarily meant a high standard of comfort. Millions were getting twice as much as before in nominal wages and yet not living as comfortably as before the war. He wished employers and workers alike would realize that what really mattered was what wages would buy. A higher standard of living involved a higher standard of thinking as well as a higher standard of eating and drinking. Another misapprehension was that idleness makes for happiness. If people who

we shall see the resurrection of a new American merchant marine, which bids fair to eclipse anything in the world's history. We hear many expressions of doubt as to our ability to compete with merchant marine of other nations that have been in active operation for many years, particular reference being made to British shipping. Edward N. Hurley in his report on the European Mission, stated: "For more than a generation, we have heard British seamanship and British ship-operating ability lauded. We have shared this admiration. But in our praise, we have been prone to ignore the advantages that lay on the side of the ships that flew the British flag. The truth is, that our friends across the water are, for the first time in many years, entering upon a period of actual competition."

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A New Cotton Association.

The Cotton Thread Manufacturers Exchange was organized in March at a meeting held at the Parker House, Boston, Mass., with an original membership of seventeen and has a present membership of twenty concerns. This membership will undoubtedly be increased within the next few weeks. The officers of the exchange are as follows: president, Herbert E. Locke, H. E. Locke & Co., Inc., 99 Chauncey Street, Boston, Mass.; vice-president, Francis S. Cobb, Seamans & Cobb, 140 Essex Street, Boston, Mass.; secretary-treasurer, Herbert S. Blake, 30 Church Street, New York City.

The general management of the exchange is vested in an executive committee, consisting of the officers above named together with C. E. Chaffin, Bay State Thread Co., Springfield, Mass.; L. B. Cranska, Cranska Thread Co., Moosup, Conn.; W. W. Orswell, Blodgett & Orswell, Pawtucket, R. I., and R. W. Poole, West End Thread Co., Boston, Mass.

The purposes of the exchange are to stimulate acquaintance and cordial relations amongst its members and throughout the trade; to improve the business standards of the cotton thread industry and to strive toward the correction, by all proper and legitimate means, of the abuses in the trade. Much has already been accomplished and more will rapidly be done to standardize conditions throughout the thread industry. Meetings of the exchange are held on the second Wednesday of each month. The business office of the exchange is at 30 Church Street, New York City.

D. Gleison, Chairman, Board of Managers, Industrial Divisions, General Motors Corporation, and Manager Industrial Bearings Division, Hyatt Roller Bearing Company, announces the appointment of P. C. Gunion as Advertising Manager, Industrial Divisions, General Motors Corporation.

National Association Meets at New York

The National Association of Cotton Manufacturers held the 106th annual meeting of the association at the Hotel Biltmore, New York, April 23rd, 24th and 25th. There was a large attendance of members and guests and the get-together smoker, which is a regular feature inaugurated by Secretary Wilson of the association, proved most attractive.

Wednesday Evening Session.

The first session of the convention was held in the music room of the Biltmore, and comprised the reading of the president's address by W. Frank Shove, the report of the secretary and treasurer, and the reports of the standing committees. In addressing this first session, President Shove said in part as follows:

Anyone essaying to address the representative and keenly intelligent body of men assembled in this room tonight, essays a task the difficulties of which may not be immediately apparent, but are none the less real. Trade prospects you know as much about as I do. Labor, the cotton market, the goods market, and so forth, are our general topics of conversation. So that, generally speaking, the choice of topics is circumscribed, and, within certain definite limits, most subjects have been so universally dealt with, hashed and re-hashed, discussed and re-discussed, that it would seem hardly anything new is left to be said. However, so far as in me lies, I will do my utmost to keep you interested; for the many faults it is possible for you to find I would crave your indulgence.

The year just closing has been one of the most strenuous in the history of our organization, and the duties developing upon the officers and the board of governors and upon the members of the various committees, have been exceedingly onerous. Twelve months ago we were in the midst of the world war and every effort had to be made by the textile, as well as other industries, in order to increase production of goods necessary for the successful prosecution of the war. During the months which have since elapsed, we have seen the armistice signed and witnessed a general demoralization of business. War contracts were cancelled in wholesale fashion and the general result on our industry was that the market for textiles dropped from the high points of 1918 to—in some cases—half the value. Meantime, manufacturer and merchant awaited developments. So great was the disruption of business that many manufacturers were forced to shut down. With very little reduction in material cost and no reduction in labor and overhead costs, there was no margin of profits in the prices offered—as a matter of fact many offers were considerably below the cost of production. At the present time business seems to have taken a very appreciable turn for the better and I do not see why we in the cotton industry should not soon be enjoying another period of prosperity.

The successful agitation by labor for a 48-hour week is also a distinctive feature of the past few months. It is beyond dispute that a shorter working day in the cotton factory reduces production and consequently raises costs; apart from that I have no objection to it. The one great evil from the point of view of the northern and eastern manufacturers is that the 48-hour week is not universal. Even the agitators themselves admit this evil, and unless the southern states adopt the same schedule of hours, then the present schedule in our territory is a most invidious arrangement, an arrangement which cannot fail to react unfavorably on the textile industry in this section of the United States.

The formidable bogey of the high cost of living does not seem to become any less formidable—in fact, in view of the general demand for shorter hours and increased wages, it seems to become more formidable. Quantity production and reduced costs are the two things which will bring the expense of subsistence down to reasonable limits, but the pity is it is so hard to explain this truth to the great mass of people and to convince them of the soundness of the argument. The present situation in regard to the cost of living is not of course, peculiar to any one nation—other nations have exactly the same difficulty to face.

President Shove then quoted from an address by W. A. Appleton, the English labor leader, on "Industrial Illu-

W. FRANK SHOVE, RE-ELECTED PRESIDENT.

sions" or "Misapprehensions," commenting as follows:

The first misapprehension he dealt with was that Capital qua Capital or Labor qua Labor, was value. Only when both were employed together was good achieved. Another misappreciation was that high wages necessarily meant a high standard of comfort. Millions were getting twice as much as before in nominal wages and yet not living as comfortably as before the war. He wished employers and workers alike would realize that what really mattered was what wages would buy. A higher standard of living involved a higher standard of thinking as well as a higher standard of eating and drinking. Another misapprehension was that idleness makes for happiness. If people who

were striving for more leisure were only doing so in order that they might do nothing during their lengthened period of leisure, he was sure they were not going to be any happier. It was the exercise of thought and creative capacity that afforded the highest happiness.

He was afraid the people were getting into trouble by assuming that shorter hours necessarily meant less unemployment. He feared rather that the effect would be seriously to increase the cost of production, and, therefore, the selling price in overseas markets. If hours were to be shortened and wages kept at a desirable level he feared that would help create unemployment. If the cost of production and transport exceeded the power or will of the purchaser to pay, no business was done.

I do not think we have ever read any speech of any labor leader which was so full of hard headed practicality and sound economic thinking, as this speech of Mr. Appleton's. One thing he might have stated in his remarks about the miners, the railway men and the transport workers, was that just to the extent their demands handicapped the other fellow, so must the other fellow in turn make equivalent demands, so that the whole process of higher wage demands must continue in a vicious and ever widening circle.

For a few moments, gentlemen, I want to digress. In view of what I have already said one big inference we are to draw is that quantity production is the principal compelling factor in the reduction of the cost of living. In turn, one of the principal factors in quantity production can be improved machinery, and in this regard the extent of my digression is that, with a view to encouraging the improvement of machinery, we might find it advisable to establish a Patents' Department.

I should think the establishment of a well advertised Textile Patents' Department, to which inventors who needed assistance could submit their inventions for protection and development, would serve to bring forward a lot of useful ideas which, under present conditions, may never see the light of day. The office, including the employment of an expert patents lawyer, could probably be made self-supporting, and inventors would have guarantees that their invention would not be exploited except under royalties satisfactory to themselves and for the benefit of the industry in general. I would suggest that this idea might profitably be developed.

Now to return to my former theme. Some of the difficulties which confront us in the settlement of the labor question, I have touched upon; with those upon which I have not touched you are perfectly well acquainted. The next question is, What is our constructive policy for remedying the general evil?

We have heard the terms "Readjustment" and "Reconstruction" until we begin to feel tired of the words and to wonder whether "Reconstruction" means anything whatever. Does it mean reconstruction upon old bases or is it to be entirely new reconstruction upon liberal, or even radical, lines? The readjustment and reconstruction we have seen since the signing of the armistice last November, seem to me to be more in the nature of rapid evolution—evolution on the basis of things already established—rather than in the nature of any radical reconstruction.

We learned many and tremendous lessons during the war period and have learned many more in the months which have elapsed since the armistice was signed; the question is, are we going to profit by them? Are we going to formulate broad and liberal industrial policies? Above all, are we going to lead along newer and better lines or is our leadership to consist merely of being driven along in front by the force of the masses behind?

A great responsibility, probably a greater responsibility than has ever been borne before, has devolved upon the leaders of thought in every walk of life. How such responsibility is shouldered and how the large problems of humanity are to be dealt with, are matters of tremendous import in the destiny of the peoples of the world. It is no use drifting, gentlemen; the deepest thinkers and the higher intelligencies of the world must lead. If they neglect the opportunity or refuse to lead—if they refuse to cut deeply and deal drastically with the canker of inordinate selfishness which is gnawing at the very heart of humanity—catastrophe must inevitably follow. The idea that everything must be taken for the benefit of any one class, proletarian or capitalistic, peer or peasant, must give way to something more nearly approximating to the Golden Rule and to the practicality of the old maxim, "Live and let live"—nay, further than that, "Live and help to live." To me it seems that only in this matter can we combat the disease of bolshevism, of anarchy, call it what you will. For bolshevism is a disease, gentlemen—a disease of the body politic—the outward manifestation of an inward disorder of the body of the human race. So long as that inward disorder is allowed to remain in the racial body, just so long shall we have bolshevik and similar outbreaks. Human entities are but the blood corpuscles of the body of the world, and just as the contaminated and impoverished blood of the human being will show itself outwardly in repulsive disease, so will perverted, downtrodden, and impoverished human entities, manifest themselves in bolshevikian outbursts and general unrest. The suppression of bolshevism is useless without a removal of the cause; you cannot cure a skin eruption due to diseased blood by removal of the outer cuticle; the blood must be revitalized and enriched until the body is sufficiently strengthened to throw off the disease of its own volition.

So it is with humanity, gentlemen. As the physician is to the human body—the positive arbiter of the necessary curative course—so must the thinkers and men qualified to lead be the positive thinkers and positive leaders, real leaders, along the path of human destiny. And, as a consultation among physicians is often necessary, so is the consultation of representatives of all classes of society necessary to the removal of economic disease from the human race. In this direction, gentlemen, it seems to me that we need not disdain to take a lesson from the British in the great strides they are making toward the establishment of an industrial parliament—the appointment of a body of men equally representative of capital and labor—to settle definitely the relations between the two, from time to time to make such regulative alterations as may be necessary. The great stumbling block to this plan is the lack of representation of the great body of people who are not definitely connected with either one side or the other and who inevitably suffer in any conflict between the two great branches of industry. Why this third body should not be equally represented I fail to see, and undoubtedly the final outcome will be that all three sections of the populace will have equal representation. Is it an impossibility for us to evolve a similar plan or are we to allow the palm for intelligence and iniative to pass to the British?

In the meantime it is all very well for us to say that their motives and methods are wrong, but, What are We Doing to Show the Masses that we are Right? The desire for something better is inherent in man—it is not the special property of any particular class. We may rail against bolshevism and kindred manifestations of the spirit of unrest, but what are we doing to provide an outlet for a force which is nothing more or less than the desire of the mass for better things? Rightly directed that force can be made a wonderful power for good; wrongly directed it leads to chaos and misery. Men must be taught that different classes and different strata of society are inevitable as long as human nature is human nature; that an aristocracy—an aristocracy of brains—is also inevitable and conceivable under any and all conditions. They must be shown that men putting forth the greatest mental efforts will receive the greatest rewards, and they must also be shown how and why advancement to higher things is not only possible but the certain and essential reward of intelligent effort.

Among the reports of the various committees was the report of the Medal Committee, in which they respectively recommended that the medal for the current year be awarded to Randall N. Durfee, of Fall River, for his most effective efforts to bring about better methods for the financing and warehousing of cotton.

At the close of this brief business session, President Shove turned the meeting over to Chairman Chas. H. Ely of the entertainment committee for the

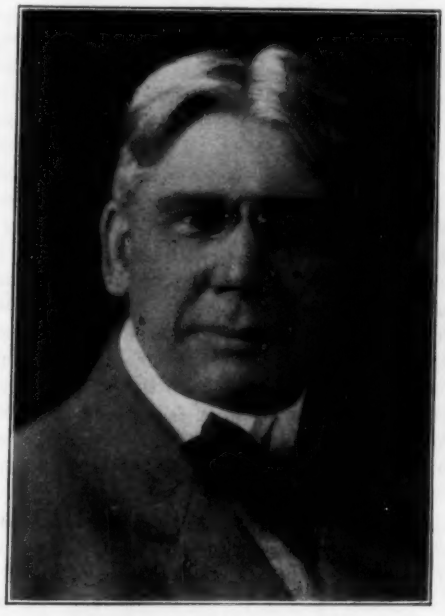
Get-Together Smoker.

Chairman Ely then introduced W. B. Thompson, of New Orleans, presenting him as a past president of the Cotton Exchange, an ex-member of the governor's staff, and one of the ablest cotton men in the South today. He announced the subject upon which Mr. Thompson was to speak as "The Era of Good Feeling Between the Sections." Mr. Thompson spoke in part as follows:

I think it is a rather reprehensible practice to begin a speech with an apology. In view of the fact, however, that instead of delivering an oration I am going to read a paper, I think that I am entitled to and that I am justified, in so far as you are concerned, in making at least an apologetic explanation. Some two weeks ago I was in New York and then, as I always am, I was impressed with the greatness and splendor of this city. I was then, as I am now and as I have always been, proud of this giant among the cities of the world, and I rejoice that I and citizens of every section of the United States have a part ownership in this great metropolis.

New York represents not only the type of unity, but it is the place of union because all the people from all sections of the country come here and know the great heart of this city, which draws no line and recognizes no section. When I left here I utilized the hours of travel in trying to compose a speech for this occasion. I thought of this great symbol of unity which is so spendidly shown by this great city, and then as my imagination rose to heights I thought of the great brotherhood of man, the brotherly love that was spreading over this country, and even flew so high as to picture the time in the near future when the spinner-lion would lie down with the cotton producer-sheep, and all would be happy. I even thought of a picture I would draw where the cotton manufacturer and the producer would roll down Broadway arm-in-arm, making the welkin ring with shouts of brotherly love. It is not necessary for me to say that this picture would be staged before the first of July. When I arrived in Memphis, where it so happened that I was detained a day en route, I was full of this essence of brotherly love, the Union, the North and South, the spinner and the cotton farmer.

I picked up the morning paper, and after glancing at the first page and receiving my morning shock on account of the terrific velocity with which the peace negotiations on the other side are proceeding, I turned to the cotton page, and there to my dismay, I saw where the Memphis Commercial Appeal, one of our important southern newspapers, was engaged in a more or less sanguinary altercation with my very good friend and your valuable secretary, Mr. Rufus Wilson, on what seemed to be a more or less sectional issue. I at once went forth and sought that newspaper man, and when I found him I told him that I hadn't the slightest objection in the world to his taking a fall out of Mr. Wilson, and I didn't care a hoot how many feathers Mr. Wilson shot out of him, but I did object to



SECRETARY RUFUS R. WILSON.

the both of them together putting a perfectly good milk and honey oration "on the blink." I found then, as I found out afterwards, from other developments of a more sinister character than the passage between my friend and the newspaper, that I would have to treat this subject from a somewhat different standpoint. I would have to exercise a little care and thought in the composition of a speech with this title. I thought it advisable to employ a sort of league of nations treatment. Now it is the case with me that when I haven't much to say I can say it with more or less fluency, but when I think I have a more or less important message and commit the thing to writing, then I am not able to speak extemporaneously.

In other words, I can speak a speech which is rattling around in my head, but I cannot speak a speech which is compactly resting in my pocket. My complaint then is not the usual stereotyped one that I am not prepared to make a good speech, but it is the rather unusual situation that I find myself too well prepared.

But what is the new era of good feeling, and how shall it eventuate. Is it a transient stage of sweet sentimentalism resonant with lyric brotherhood of man and millennium stuff, to be all too soon rent asunder by the unbrotherly and unmillennial acts of men? Or is it the period wherein we shall acquire a clearer conception of the needs and rights of men as men and under the teachings of this enlightenment construct the everlasting democracy of good fellowship and reciprocal good works? Time will answer these questions and will answer soon. Upon whom does the happy issue out of this dilemna depend? Let us not permit any obscuration or evasion of responsibility. The orators, the poets, the phrasers, the dreamers will not avail. Whether this era shall be the fool's dream paradise or the birthday of a permanent new and better stage of civilization, depends primarily and principally upon the attitude and acts of the world's most powerful and practical force, namely, its business men. When I say "business men" I use the term in its widest sense, including therein the producing, as well as the commercial, financial and industrial divisions of the economic commonwealth.

Passing from these statements of general principles, I will endeavor to make specific application thereof to the relationship existing between the cotton manufacturing and the cotton producing interests. I have stated that heretofore the attitude of the one towards the other has not been characterized by the mutual confidence which should, for the advantage of both, prevail; and the saying is true. It is also true that the estrangement in question is almost entirely due to lack of understanding on the part of each party as to the situation and needs of the other, and to a misunderstanding on the part of each as to the motives and purposes which actuate the other. But we must not be by our enthusiasm beguiled into the belief that a mere sentimental disposition towards friendliness will fructify in permanent practical cooperation so long as the substratum of non-understanding, misunderstanding and mistrust remains.

I know that the great body of American spinners are sympathetic with the needs and aspirations of their fellowmen of all sections and of every avocation, and I know that both from motives of friendship and self-interest they are very far from desiring even for an immediate profit that the cotton producer should suffer loss or impairment of his productive capacity. I know that the great body of cotton planters are generous men who from motives of both good will and self-interest are not only willing but anxious that the spinning industry shall thrive. But the spinner, misled by propaganda of selfish parties interested in the welfare of neither the manufacturer nor the producer but only in price fluctuations, and to an extent misinformed as to the real situation and purpose of the producer; and the farmer, resentful for the long years of unremunerative effort through which he has toiled, apprehensive of the emergency of which he is presently menaced and goaded by these conditions into a fighting mood—are still fundamentally apart.

The threatened disaster, with which the post-war and reconstruction period is pregnant, has shocked all the interests in question into a realization of the imperative necessity of reforming their methods at once. We accept the responsibility and we make no plea for help, but we do claim and demand the right unchallenged to rectify our mistakes and to reform our methods before the cotton producing industry is engulfed in disaster.

The modicum of the 1918 crop, which came to market in the early days of the season, found an active demand at fairly remunerative prices, which were almost universally accepted. In the latter part of September, and before only a trifling proportion of the crop had been marketed, a great decline was precipitated because of threats of price fixing coming out of Washington and the fear that prices might be fixed below the very high cost of production and because of the activities of the speculative short operators. Wide declines and spot market demoralization followed. In the meantime cotton was being picked and brought to market, where it met with very lax and irregular demand. There was nothing for the farmer or the merchant who had taken cotton from the farmer, on account of the latter's indebtedness, to do but hold the supply for a steadier and more active demand. If the farmers and merchants could have sold they would have been obliged to accept prices much below the cost of production and purchase and would have by such action precipitated a ruinous panic. Before prices had reacted to anything like a remunerative basis, and before the market had regained a healthy tone, the war came to a close and thereupon another great downward sweep of price movement occurred, which was followed by aggravated stagnation in demand. Stocks in both the farmers' and merchants' hands rapidly increased. Withholding these supplies from sacrifice sale was not a programme of speculation, but the desperate means of self-preservation. Sustained by the expectation that foreign trade would be opened, and that foreign demand would help to relieve the weight of the burden they were carrying, the spot holders held grimly on. When after the expiration of some three months no appreciable relief in this regard had come or was in immediate prospect, and as the new planting season approached, the farmers, merchants and bankers of the South, carrying an almost crushing load of accumulated supplies, realized that something summary must be done in order to preserve themselves from disaster, to avert a crippling blow to the cotton producing industry and thereby insure to the world a reasonable supply of raw material produced by a prosperous people. If the farmers and merchants had been compelled to throw their holdings upon the market pending the planting season, or if they had been guilty of the folly of planting for an over-supply while their present great holdings were unsold, through the disaster that would surely befall them, they and the whole cotton using world would suffer and no one would be benefited except perhaps a few bear speculators. This critical situation which was the genesis of the holding and acreage reduction movement the South is pressing to a successful conclusion.

Under the existing conditions the holding of the surplus, pending the opening of foreign trade avenues and the readjustment of domestic trade conditions, is not a movement for speculative profits but a plan of self-preservation. Under the present condition of trade dislocation and the prospective tedium of trade rehabilitation, because of which considerations the world is not able to absorb the present surplus and will not for a few years at least reach the maximum pre-war consumption, the curtailment of surplus cotton production which the world does not want and the planting of the minus acreage in food and

feed crops which the world does want and which it must have, is not only an economic necessity but a partiotic measure. If we supply the world with what cotton it needs and can absorb at a price reasonably profitable to the producer, and if we utilize our surplus of land and productive faculty in adding to the insufficient supply of food, we will do ourselves and humanity an infinitely better service than if we planted our lands in the one crop and went broke by trying to pay famine prices for food and feed stuffs with the proceeds of cotton sold at prices below the cost of production. We have no wish or design to cause the cotton manufacturing business to become unprofitable, nor to cause the price of the manufactured product to the public to be unduly raised—we're simply trying to adjust the cotton producing business to the new conditions and by putting this business upon a sound economic basis we believe and know that we are not only saving ourselves, but we are adding to the wealth of the nation and benefiting the cotton using world at large.

At the conclusion of Mr. Thompson's address, the balance of the evening was devoted to a variety of entertainment features, and good fellowship among the members and guests present.

Thursday Morning Session.

The session on Thursday morning was a group discussion, the subject of which was "Winning New Markets for Our Products." The meeting was conducted by Chairman John S. Lawrence, who spoke in part as follows:

Four and a half years ago we should have studied our federal tariffs and probable imports; today we look to our foreign markets and probable exports in anticipating our industrial conditions, and we have an industry which during the war has experienced but a normal expansion, and a home market likely to use its pre-war normal requirements.

Statistically the American market since the armistice should never have been stronger; probably it never has been weaker. Our merchants, in common with those of the rest of the world, lacked confidence in prices and a satisfactory settlement of peace. Retail trade throughout the United States has been good, but international trade in most lines has been at a standstill. During this period we have had a liquidation of prices; many of our lines were recently selling below cost, resulting in slight curtailment; while in England the cotton mills, who depend on their export markets for about 80 per cent of their outlets, have been forced to close some two-thirds of their production. So drastic was the curtailment of spindles throughout the world, other than those in Japan and the United States, that many felt that regardless of the good trade ahead, it would be impossible to spin sufficient cotton this year to prevent demoralization in the raw cotton market. Fortunately our raw cotton was in strong hands and has been withheld from the market throughout this period of depression. I cannot believe that our cotton friends will so curtail their crop this summer as to withhold from the spindle, lint so needed to clothe the destitute peoples who fought with us, as and when they can be reached with textiles.

For three years before the war Continental Europe's net average exports over imports, per year, of yarn and cloth, were about 138,000,000 pounds—or about 10 per cent of the cotton goods production of Continental Europe was exported, and 90 per cent used to clothe its 450 odd millions of people. This formerly large producing area, normally consuming some 7,000,000 bales of cotton per annum, cannot be exporters for some time, and they are likely to import cotton goods to the full extent of their credit facilities.

A comparison of today's prices throughout the world is particularly enlightening. Cotton piece goods are today selling in the United States at from 10 to 20 per cent below British prices; and 1 to 200 per cent below French, Belgian, Roumanian and Scandinavian prices. In Japan only are prices equal or less than the United States, and these countries are those on whom the world prmcipally relies for their clothing production.

With the coming of peace, and with it confidence and establishment of international credit, the world will seek to buy in the cheapest market. Scandinavia is buying here; Columbia is inquiring; Belgium has many of our goods and wants more; Turkey, who normally imports aoout 148,000,000 pounds of yarn and cloth per year, and Roumania who normally imports about 43,000,000 pounds of yarn and cloth per year, are seeking to establish credits for textile purchases. Most of South America and the British colonies are not yet in the market. These markets are practically new markets for our textiles. China and the East, our old markets, have been buying recently; England and France refuse to admit our cotton goods, and through this policy seek to protect their re-adjusting industries. Such a policy of protection can but tend to maintain their high cost of production. Our American customers who lacked confidence recently met under the auspices of the National Wholesale Dry Goods Association and reported a growing demand for merchandise on the part of the retail trade, and accepted a statement to the effect that recent price advances made by mills have served to accentuate the feeling that bottom prices in primary markets have been reached, and that a natural scarcity of certain goods was indicated. Through this statement they recognize, as we do, the necessity of protecting the American consumer.

Our industry is not capable of rapid expansion; the responsibility of caring for the world's needs has come to us through the misfortune of others, and with it we have undertaken a new obligation. We have in addition to the responsibility of our stockholders an obligation to fairly clothe the people of the United States, our returning soldiers, and the people of the world who have suffered. The permanency of this business will depend upon the degree of "sane sound service" rendered by our United States industry in the next few years. I do not refer to the service of the stockholder, of the manager, of the superintendent, or of the operator, of capital or labor—they all are jointly charged with responsibility, with opportunity, that they might jointly prosper and serve.

At the close of Mr. Lawrence's remarks he called upon Mr. Baldwin to read a paper by Allen Walker of the Guaranty Trust Company of New York, entitled "Banking Facilities the Key to Trade Expansion." Extracts from this paper follow:

The Key to Trade Expansion.

There is no doubt that for a long time to come there will be business for Americans to do. In more than one sense this land of ours is the hope of the world, but we must remember that it is a present hope. The needs of the world are eternal, but there is no permanence of the absolute necessity under which a great many nations now

find themselves of looking to America to supply those needs. On the contrary the probability is that the war experience through which they have just passed will lead those now dependent upon us to seek with redoubled energy to establish an independence of us and to avoid a recurrence of their present difficulties in respect to food, raw materials, machinery, construction material, and other things which they now expect to get from us.

The business men of America are chiefly concerned, therefore, with that arrangement of the various factors in the situation, with that use of the present opportunity, which will promise most for the long future. And it is the belief of those who have given their best thought to the problem that each element will be strengthened by the cooperation of all. It is readily understood that the manufacturer would be as helpless without the railroad or the steamship as the producer of raw material would be without him. The exporter or importer must use the bank. The American exporter may be able to turn out the article required, he may be able to make delivery on time, his product may even be superior to that of his foreign rivals, but unless he can meet the terms they insist upon, he will lose the business.

Here, then, is a problem that can only be solved by a closer affiliation among manufacturers, exporters and bankers. And such an affiliation will appear the more advantageous when these interested parties become more thoroughly acquainted with the service which one can offer the other. Our merchants and manufacturers must become thoroughly and practically acquainted with the financial machinery for marketing and distributing their goods both at home and abroad.

Bank credit bridges the gap between the raw material and the finished product—between production and distribution. There is no mystery and little complexity about financing foreign trade. The principles are the same as in domestic business. There are only the differences of language, differences of currencies, and the greater distances.

It requires the undivided attention of highly trained experts to deal successfully in foreign exchange, for all the various, newly-developed methods of financing products for export, highly-trained men are necessary, not to speak of a worldwide organization to accommodate buyers and sellers the world over.

The larger the bank, the better its facilities ought to be, and the more economy in conducting its transactions, with resultant good to business generally. While a comparatively small number of banks deal directly with the European banks, there is hardly a bank in the United States which does not have transactions that are a direct result of exports or imports. The larger institutions are the channels through which these transactions ultimately find their way to foreign countries and make it safe for the bankers of the country at large to finance shipments of products to foreign countries.

Previous to the passage of the Federal Reserve Act our banks were greatly restricted in establishing themselves abroad. That has been changed materially now and many of our large banks are establishing branches or relationships abroad which will contribute greatly to the fostering of trade relations.

Capital will come readily to the aid of foreign trade if such trade is properly conducted. Already there are very definite indications that manufacturers and merchants in the United States will take full advantage of the facilities offered by the Webb Bill for operation in the world's markets. A number of groups, representing the major industries, have gotten together and discovered that the spirit of cooperation developed during the war really means something, and that leading men in the several lines of business are quite ready to pool their products and their finances in connection with foreign trade expansion.

At the close of Mr. Walker's paper, Chairman Lawrence introduced the Hon. Geo. W. Norris whose address on

American Bottoms for Our Goods.

follows in part:

The carrying of goods to foreign markets is an important factor, and the problem of an American merchant marine includes two things. It includes one purely commercial aspect which is the one that I am going to touch on principally this morning. But before I take that up, let me call your attention to the fact that in addition to that commercial aspect, it involves a national or governmental or patriotic aspect.

In addition to our continent, we have Alaska on the north, the Panama Canal Zone, the Philippines and other islands in the Orient, and recently acquired islands in the West Indies to defend. In addition to the defence of these possessions of our own, we undertook, a hundred years ago, to defend the whole of South America from foreign aggression. We have lately reiterated our determination not only to extend that protection, but to extend it exclusively. We have insisted upon our right to be the sole protector of South America, of all the countries of South America, from any foreign aggression.

Now if we are to perform the international obligations that we have assumed and are assuming, if we are even to adequately protect ourselves, it is perfectly manifest that we need a strong navy, and we cannot have a strong navy without an adequate supply of auxiliary ships, without a trained or partly trained personnel, largely exceeding the men enrolled.

Moreover a wise merchant doesn't employ his competitors to deliver his goods to his customers. If we were only to handle in the future this rough bulk stuff which has constituted the greater part of our exports in the past, we might trust to tramp steamers to take the wheat and coal and iron, but if we are going to do business in finished goods that are to go to jobbers or retailers, it is perfectly plain that speed and certainty of delivery is going to be a vital factor in the doing of that business.

Now I have said, and this is the last thought that I want to leave with you, that however much we may be opposed to government operation or to government ownership, there are certain points that should be carefully considered before this country as a whole reaches a decision on the disposition of these ships that have been built or are being built by the Emergency Fleet Corporation. First, it seems to me that we ought very carefully to consider what is going to be the effect upon the shipbuilding industry of this country of dumping on the market 2,000 vessels which, if they are to be sold at all would necessarily have to be sold at a low price, because never in all the history of the world was anything approaching that number or tonnage of ships put upon the market for sale at one time.

If these ships that the Emergency Fleet Corporation has are to be operated by private capital there has got to

be an immense amount of private capital raised for that purpose, and the raising of capital for anything connected with shipping has always been a difficult proposition in this country.

Therefore, in the interest of all parties—in the interest of the ship owners, in the interest of the government itself, and in the interest of the importers and exporters—I say that this proposition is tremendously important, and it involves a number of features that should be considered, and we should not, any one of us, let our aversion to government interference hurry us into the conclusion that the government must at once get rid of the ownership of those vessels.

This is going to be a lively issue. It is going to be discussed in the newspapers and magazines. It will be one of the largest questions before the next congress, and I am most interested in seeing that when it is settled by those who have to settle it, it shall be settled right, and it seems to me that it is the duty of each one of us, as a citizen, to contribute our mite to the corect settlement of that question.

After some general discussion Chairman Lawrence remarked, "I don't know that you all know that we have a research committee, and I am going to ask Professor Copeland, who has undertaken some of this work, to say in not more than five minutes, a little something of this work."

The Research Committee.

Prof. Copeland then presented some figures of which the following are extracts:

This first report, which has just been published by the Research Committee of the National Council, points out in the introductory letter that one of the functions of the committee was a study of trade tendencies and comparative values of textile fabrics throughout the world. One of the first moves which the committee made was to gather statistics regarding the foreign trade of European countries, because it is to Europe that we must look first in making any estimate of the obligations which this country will have to meet during the next 12 months or longer in supplying textile materials; and furthermore the question of products in the European countries is also one of the largest factors in the equation that must be worked out for the solution of our foreign trade problem in the cotton industry.

In this report the statistics for the imports and exports of cotton cloth and yarn in the countries of Continental Europe are summarized. I will refer to only two or three. For example, this table shows that of the total exports of yarn and cloth from the Continent of Europe—572,000,000 pounds, roughly, the largest quantity was exported from Italy; this was 121,000,000 pounds. The Italian industry is quite obviously manufacturing chiefly for the export trade. So far as the import figures are concerned, one of the most striking points brought out in this investigation, I think, was the fact that of the total imports, 433,000,000 pounds, 148,000,000 were imported into Turkey, 43,000,000 pounds into Roumania, and 16,000,000 into Bulgaria.

Now the purpose of preparing these tables in this form was to give a birds-eye picture of the situation before the war. These figures are all averaged from 1910 to 1913, to give us some idea of the relative importance of the trade of these different European countries. It is proposed to prepare similar tables for the other countries of the world where statistics are available, and also to make an analysis covering a longer period of time to show what the trade tendencies have been for the different countries.

The second point is with reference to prices. This work was undertaken more recently, and we incorporated in the report only a few rather rough comparisons of print cloth prices and prices of shirtings and sheetings in England and the United States. These figures are all reduced to prices per pound of cloth, and they indicate that the English prices were approximately 20 per cent above the American prices on March 20, the latest date at which the published figures were available. When this report was published, we were gathering figures for yarn prices. We also plan to gather figures for similar comparisons, for other producers, and for the leading consuming markets in the world. We have in mind obtaining prices for the Japanese fabrics in order that we may know how the Japanese prices compare with the others. I might say in behalf of the committee that we should like to have all the suggestions and advice that the trade will give us, because our only purpose in carrying on this work is to make it of practical use to men in the industry. If it isn't, why we want to know it. We want to know how it can be done better.

After some further discussion, the meeting was adjourned.

Thursday Afternoon Session.

The discussion of the afternoon session was in charge of Chairman Henry P. Kendall, of Boston, whose subject was "American Industries' Biggest Problem—Suggested Methods for Its Solution."

Chairman Kendall spoke briefly of the fact that the word Bolshevism was never heard a few years ago, but now one is hardly able to pick up a newspaper or magazine of any kind and not find the word used. He then introduced Harry F. Atwood, of Chicago, who presented an address on "Our Constitution, the Antidote for Bolshevism," saying in part as follows:

The Antidote for Bolshevism.

It is rather a startling statement, but it is an indisputable fact that during all the thousands of years prior to the writing of our Constitution there was no government, in all that myriad of time, to which the historian can point and truthfully say, "There was a government that worked well." It is just as ridiculous to abandon that Constitution in the science of government, as it would be to abandon the ten digits, in the realm of mathematics; and it is because of that fact that I am willing to impose upon you at this late hour.

The men who founded this government said that they were more fearful of democracy than they were of autocracy; they made very clear distinctions between a republic and a democracy, and they called what they had founded a republic. We never used the word democracy in referring to our government during the first hundred years. It is an innovation, and since we began it the world has been growing chaotic.

In order that we may make no mistake—I will read from the Federalist exactly what they did say—"After the Constitutional Convention had been held, Hamilton, Jay and Madison were appointed to interpret the work, and after a conference Madison, speaking of governmental terms, objected to calling Poland or England or Holland

or Venice republics. He said that they were nearly as dissimilar to each other as to a genuine republic.

He said of democracies:—"Hence it is such that democracies have ever been spectacles of turbulence and contention; have ever been found incompatible with personal security or the rights of property, and have in general been as short in their lives as they have been violent in their deaths. Theoretic politicians who have patronized this species of government have erroneously supposed that by reducing mankind to a perfect equality in their political rights, they would at the same time be perfectly equalized and assimilated in their possessions, their opinions, and their passions."

"A republic, by which I mean a government in which the scheme of representation takes place, opens a different prospect and promises the cure for which we are seeking. . . . . ."

The two great points of difference between a democracy and a republic are: First, the delegation of the government . . . . . ." and so forth.

Now then, not five per cent of the American people are familiar with that fundamental fact. Aristotle is quoted more on the science of government, than all the men that lived prior to the founding of our republic, and his contribution was simply this: He said, "Autocracy was one extreme that was dangerous; Democracy was the other extreme that was dangerous; and there ought to be a mean between the two, that avoided the tyranny of the one, and avoided the chaos of the other, and provided for government of the best through selection;" and with the men who founded this government, that was the supreme thought they had in mind.

I want to say that I have no parties in mind at all when discussing this question, because if I were to charge either party with having introduced the policies and perils of democracy, I should charge more to the republicans between 1901 and 1910, than to the democrats; and there is no difference at the present time in the conduct of the two parties.

In no sphere of activity do we find the dangers of the two extremes more disastrous, and on the other hand the value of the golden mean more beneficial than in the realm of government. Too little participation by the people means autocracy, which results in tyranny. On the other hand, too much participation by the people means democracy, which results in mobocracy. It is the golden mean, the republic—the standard form of government, strictly and literally adhered to—which gives just the right amount of participation by the people in governmental affairs and causes the political plant to thrive and reach its best developments and its full fruition.

And yet every state in the Union, instead of using it as a model, is trying to see how far they can vary from it; and there is not a man at the Peace Table who would know our constitution if he saw it coming down the street.

The men who wrote that constitution and founded this republic did for the science of government exactly what the man did for mathematics who evolved the ten digits—what the golden rule did for moral philosophy—exactly what the man did in the realm of time who made the clock. It should have been adopted all over the world. It began the first great progress of government that the world has ever known.

Prior to the adoption of that constitution there had been no government that could provide for its people any one of the seven fundamental things for which government is primarily organized. No government had ever secured either religious freedom, or civil liberty, or freedom of speech, or freedom of the press, or security of individual rights, or popular education, or universal franchise.

But after the adoption of that constitution we began to secure all seven of them automatically, although for thousands of years prior thereto, to secure any one of them had baffled the philosophers and statesmen of all time. And following the constitution we made greater progress in a hundred years than the world had made in thousands of years before. I can call more statesmen on American soil during the first hundred years after the founding of the republic, than you can name in all the countries of the world during all the history of time, and that is a pretty fair test that they were working along scientific lines. We went from religious bondage to religious liberty, from slavery to political equality, from the education of the few to the great public school system.

Before writing that constitution there was hardly an invention, but when the constitution made safe the rights of person and the rights of property to the individual, men began to invent—why up to that time, for seven thousand years, they had actually reached a point where the business man and the farmer were able to operate with ox cart and wooden spade. But in the last hundred years we have jumped from the wooden spade to the steam plow turning twenty-two furrows at once, and from the ox cart to the steam railroad. And equal progress has been made in every line, because it encouraged individual initiative.

There is a general impression that the constitution is difficult to understand, and most writers upon the constitution have made every page of their writings more difficult to understand than the constitution itself. It is as simple as the ten digits, or the golden rule, or the ten commandments. It says there shall be a legislative body, and defines its powers. There shall be an executive, and defines its powers. Provides that the executive and legislative shall have all power of appointment, all power of legislation, all power to raise and expend money, and are required to do two things: to create a judiciary, and to recognize certain inherent rights of the individual that neither other individuals, nor the government itself can take away.

Those are the four elements of a republic. A republic is a form of government under a written constitution that provides for an executive and a legislative body, enumerates their qualifications and defines their powers, provides for a judiciary, and for individual rights. When you take away one or more of those four elements you drift into autocracy, and when you add one or more to those four elements you drift into democracy.

And I want to tell you that if that point was made clear you would have bolshevism buried in no time. Because bolshevism is only extreme democracy. We said, "make the world safe for democracy," and Russia was the first of our victims. Russia is a perfect democracy right now. When a man is extremely gluttonous we say he is hoggish, and what hoggishness is to gluttony, bolshevism is to democracy.

We followed that constitution prettly closely for a hundred years, but about the latter part of the nineteenth century one of the demagogues said you can make a dollar out of fifty cents, and many followed that notion. Since

then the demagogues of all parties have been trying to outdo him, and we have suggested such things as the initiative and referendum and recall, recall of judicial decisions, boards and commissions, excessive legislation, and constitutional amendments, until we see no end.

Alexander Hamilton, to whom we owe more than to any other single individual for the standard form of government, and to whom the world owes more than to any one else for enlightenment in the field of political science, sounded a warning note when he said, "Lately congress . . . have gone into the measure of appointing boards, but this, in my opinion is a bad plan."

All commissions that have been appointed since the constitution was adopted were departures and dangerous experiments, and their existence has resulted in the expenditure and waste of billions of dollars, lessened the efficiency of public service, and confused governmental procedure.

Abraham Lincoln, to whom we owe more than to any other single individual for the preservation of the republic, expressed in no uncertain terms his opinion of boards and commissions. Just before Lincoln started for Ford Theatre, on the night of his assassination, Mr. Ashmun, who had presided over the convention in 1860, in which Lincoln was nominated for president, called at the White House. He told Mr. Lincoln that he still had the gavel which he had wielded in that convention, and after a few moments' conversation, he said: "Mr. Lincoln, I am interested in a cotton claim, and I want you to appoint a commission to investigate the matter and report." Lincoln replied, with so much earnestness and warmth that he afterwards apologized to Mr. Ashmun for his abrupt manner: "Ashmun, I have done with commissions. I think they are contrivances to cheat the government."

I am glad that Lincoln uttered those words in the very ripeness of his experience, the maturity of his judgment and the fullness of his wisdom. It was Lincoln's last expression concerning government, and I think by far the most important of all his great utterances. Would that these words might be displayed all over the world in letters of gold by day and with moving electric lights by night as the last solemn warning of the mighty Lincoln against the wholesale appointment of commissions, which is one of the evil tendencies of the present time.

I tell you business men, you want to strip the federal government and the state government of every board and commission. We had few the first hundred years, and it is quite time we returned to those simpler forms.

Now I want to tell you that the men who founded our republic were not thinking of popular government or popular fallacies. They were thinking of representative government. They knew human nature, and provided for the practice of government in the same way that you practice medicine or architecture. And during the first hundred years there never was a question submitted to the American people for decision, and there never should be.

Since we have started these popular fallacies, we have ceased producing big men. I could call eleven men out of the senate and thirty out of the house, and the rest haven't even the intelligence to know their constitutional rights, or the courage to maintain them.

Why does Daniel Webtser stand on the mountain top of New England's history? Because he devoted his life to the constitution, which was the only thing that ever made the basis of government. That is why Hamilton is great, and Lincoln, Washington, and John Marshall. And Aristotle because he had conceived what these men created. When you get away from it, it is the same as if you desert the alphabet in language, or the ten digits in mathematics.

When Webster rose in the United States senate to reply to Hayne, he said: "When a mariner has been tossed for many days, in thick weather on an unknown sea, he naturally avails himself of the first pause in the storm for a first glance at the sun to take his latitude and ascertain how far the elements have driven him from his true course. Let us imitate this prudence and before we drift further upon the waves of this debate let us return to the point from which we started, in order that we may ascertain where we now are."

We want to return to the point from which we started, and ascertain where we now are. And the mental attitude of the American people, and especially our so-called leaders—I called them demagogues, most of them, of all parties. Why, their mental condition has been very much what John Ingalls conceived the mental condition of Voorhees to be when he replied to him in the senate. Voorhees was an eloquent orator of many words, and, like our modern demagogues, talked much to the galleries, and after an hour and a half he closed with one of those flights of eloquence and being an actor he sank breathless and exhausted into his chair, and his eyes rolled up to the gallery where the applause was great. They wanted someone to reply to him, and decided upon Senator John Ingalls of Kansas, who rose and said: "If the very eloquent gentleman from Indiana would pluck the feathers from the wings of his imagination, and stick them into the tail of his reason, he would pursue a straight course."

And I want to tell you we had better pull some feathers out of the wings of our imagination and stick them into the tail of our reason, and show respect for the greatest human document ever made by the hand of man. And because a great many people are not familiar with these facts, I want to drive this statement into your minds:

That there was no government in the seven thousand years of history, prior to the writing of that constitution, to which the historian can point and truthfully say: "There was a government that worked well."

That the men who founded this government were more fearful of democracy than of autocracy, and that they founded a republic, which was a mean between the two.

The constitution is a simple thing. The world failed until it was adopted. It progressed when we followed it; and since we departed from it, it has grown more and more chaotic.

Friday Morning Session.

President Shove presiding announced that the subject of the Friday morning session would be a group discussion on Labor Problems in Peace Time, in charge of Chairman Thompson, of this committee. Chairman Thompson spoke briefly on the subject saying in part, as follows:

Before listening to Dr. Godfrey, whom we have asked to first address us, I should like to present for consideration rather than for present discussion, two thoughts which may or may not be in the minds of the speakers who will address us. If, after the speakers have finished their remarks, there is call for the discussion of the thoughts I present, it will be in order that we do so then. They are as follows: In my opinion, there have been in past years, conditions which have handicapped the conduct of the

textile manufacturing industry in this country at least, and I suspect in European countries as well.

First, a lack of assured continuity of employment. Second, a lower average wage scale for employees in the textile industry, when compared with the average wages of employees in many other industries.

Regarding the first, it is, I think, undoubtedly and unanimously conceded that continuity of employment is a "panacea" for much of the industrial unrest that has existed. In the application of this much desired condition, there are many sides. True, that steady employment should be afforded him who desires to work, so that his income may be assured and continuous. Equally true it is that capital should not only be assured steady employment, but should be free from unwarranted risks in its employment.

The second thought has been largely answered by conditions obtaining at present, and in past recent years. Labor is being paid in the textile industry wages that now more than favorably compare with wages in other industries, and as a rule, with much more steady employment income. But the requisite is, that the way must be found to prevent the return of old conditions.

It is now my pleasure to introduce Dr. Hollis Godfrey of the Drexel Institute of Philadelphia, who will address us on "Training the Worker for the New Era."

Dr. Godfrey spoke briefly, pointing out that we are interested not only in the the development of material capacity, which was probably, despite the marvelous and perhaps accidental intellectual by-product of its work, the chief concern of the industrialism of this former age, but today we find in the development of the mental capacity of the worker our great new world. This we must do if we are to live as a nation and build a great new state.

The last speaker before adjournment was Clinton McKenzie, who has had an interesting experience in building up a town. The town referred to was down in Tennessee. It is distinctly an industrial town owned by a railroad corporation. They had a cement plant which was failing. With it went the acres of land. They re-established this plant and brought in a brick industry and laid out a town on a very modern basis. With certain industrial towns, the great fault is that they are not complete towns, but single industry towns, and pretty generally prove a failure. The thought of building a well rounded out town where employment is given to all classes I have not seen worked out before, continued Mr. McKenzie. There it is worked out and has been and it is a town of about 20,000 people. Its whole composition is interesting because there have been big brains behind the directing of its growth and it stands for the principle of continuity of labor. There is more than one factor, there is more than one industry. This accounts for the happiness of the people there. A family can move in there and be sure that every productive member will be able to find employment of one kind or another. That should be interesting to some of you people whose plants are isolated as some of the cotton mills are and the whole town centers on the cotton mill proposition, and where I think, the consensus of opinion will be diametrically opposed to happy conditions. The English experience in town building has been that they should not exceed a population of 30,000 people. They feel that somewhere between 20,000 and 30,000 you will find a town that gives everything in the way of amusement that is feasible.

Friday Afternoon Session.

At this session Chairman Randall N. Durfee announced that the group discussion for the session would be on the subject of "Financial Problems of Reconstruction." After speaking briefly on this subject, the chairman introduced as the first speaker, B. M. Anderson, Jr., who presented an address on "Our Role as a Creditor Country," saying in part as follows:

In old-fashioned homilies on thrift, being in debt is represented as a misfortune, and in popular tradition, the debtor is commonly looked upon as a down-trodden person, while the creditor is often represented as avaricious, grasping, and powerful The modern business man knows better. While there are spendthrift debtors, the great debtors are the active businesses, and the more successful and active a business man is, the more likely he is to be seeking the capital of other people. When a bond issue matures, he does not pay it back out of his own accumulations of capital, but instead refunds it. The typical creditors are insurance companies, widows and orphans, retired business men, trust funds, savings institutions, and the like. The business man is more apt to make money by borrowing than by lending.

The same is true of countries. There are spendthrift debtors among countries. Turkey would be a typical case. Turkey borrowed heavily for wasteful purposes, for armies and battleships which did her little good, and she dissipated substantial portions of these funds in graft of one kind or another. She was also in debt because she could not keep her government honest and strong enough to prevent outrages on the nationals of other countries within her borders, and had to pay indemnity for these outrages.

Intimately connected with the question of debtor and creditor countries is the question of the co-called "balance of trade." We are accustomed to speak of "favorable" and "unfavorable" balances of trade, calling an excess of imports over exports an unfavorable balance of trade. These expressions are entirely misleading. Turkey had a favorable balance of trade before the war, and after the war she will have a still more favorable balance of trade. That is to say, she is heavily in debt, and she will be obliged to send out a surplus of exports over imports, leaving her people less to consume and to enjoy than would be the case were she not in debt. England and France before the war regularly had an excess of imports over exports, a so-caled unfavorable balance of trade. The reason was, simply, that they could afford it. A capitalist country, like an individual capitalist can afford to consume more than its own labor produces, and normally does so.

We became a creditor country involuntarily. Our markets were drained of foodstuffs and supplies, and as a consequence prices rose, bringing increased cost of living and reduced comforts to our people, and then reducing the operations of many of our industries, notably the building trade. It is not to be expected that our people will consent to a continuation of any such wholesale lending as we engaged in during the war. We did it partly because our sympathies were with the Allies, and partly because Europe was prepared to pay almost anything that was demanded for the vitally necessary foods and munitions.

In due time, when European affairs are straightened out, when reconstruction is accomplished and European indus-

tries revive, we may expect a reversal in the flow of commodities. During the war, we have sold far more than we have bought. When conditions reach normal again, this will be reversed. Europe will pay back to us part of what she has borrowed, and will, at all events, pay us the interest on what she owes. This will involve, as a matter of inevitable necessity, an "unfavorable" American balance of trade. International payment can be made only in three ways: by sending gold, of which we already have too much; by sending securities or borrowing, which Europe will not do to a greater extent than is necessary; and by sending commodities. While securities and credits can bridge over temporary intervals, the tide must turn, and the final equilibrium must show an excess of commodities coming our way.

So thoroughly have we been drilled in the notion that an unfavorable balance of trade is a bad thing that not a few American business men look forward to this development with dread. They fear that the influx of foreign goods will diminish the American market for goods produced by Americans. The fear is an idle one. The return flow of European goods in payment of European debts to us should be a source of nothing but congratulations. The European will not merely send us goods, but he will also send us the funds to pay for them; or, putting it another way, he will not take American money away, but will rather turn over the proceeds of his sales to American investors who hold European securities. This increases the aggregate income or purchasing power of the American people. The American people will purchase American goods in undiminished amount, and will, in addition, enjoy the comforts and luxuries which Europe sends. So much for the long run prospect.

The immediate prospect, however, is a more painful one. For Europe to pay her interest to us, she must first produce and sell goods. But her labor force and industries are demoralized. Europe needs food. Europe needs steel, copper, and equipment for the reconstruction of her industries, cities and farms. She lacks the money to pay for them. Both humanity and good business demand that we should send her these things, and this means that we must continue to sell them, not for cash, not in return for other goods, but on credit. For a considerable period, we must continue, whether we like it or not, to reinvest our interest from Europe in Europe, and must sell to Europe on credit.

Meanwhile, South America and other non-European countries, which have been accustomed, as we have been, to large annual investments from Europe, are hungry for capital, and are looking to us to supply it.

The one clear fact in the situation is that the world is starved for capital, and that long time interest rates on fixed capital must for many years be high. It also seems probable that when we have supplied the capital which Europe and the United States must have, the surplus left for distribution among the other parts of the world will be small.

Another fact must be emphasized. A borrowing country must pay higher interest rates for the funds of the lending country that can be secured within the lending country for loans of equal marketability and safety.

We can hardly look to our banks to provide funds for long time investment out of bank money on a great scale. American banks are in an exceedingly liquid position. But we must look to an unusual degree to real savings by the people, rather than to bank money. High interest rates on investment capital should, therefore, be welcomed as supplying additional inducements to the American investor to save.

There is, however, one form of capital that we can readily spare and which we should spare. Capital consists largely of building and plants, goods and equipment, raw materials, and the like. Gold, however, is also capital, and of gold we have an excess of over a billion dollars as compared with our pre-war position, while the new Federal Reserve System has introduced great economies in the utilization of gold. The countries of Europe need gold to enable them to restore their demoralized monetary systems. We should make unusual efforts to get the gold to them, perhaps by making specific gold loans, or by making deposits of gold in the great banks of Europe.

One essential condition of this, however, must be the prompt restoration of a free gold market in New York. Anyone holding a draft on New York in terms of dollars in any part of the world must know that he can get gold for it. The danger is, not that we shall lose our gold, but that we shall be unable to get rid of enough of it. The volume of payments due us from the outside world on short maturity is so great that the problem of getting gold out of the country is a serious one.

The next speaker to be introduced by Chairman Durfee was O. P. Austin of the National City Bank, who spoke on "Industrial Resources," presenting a compilation of very interesting figures showing the great growth of the country from an industrial standpoint. From these we draw the conclusion that the future of our prosperity, domestic and in that of our foreign trade, lies in the enlargement of our manufacturing industries.

At the conclusion of Mr. Austin's remarks, Chairman Durfee called for a report of the conference committee of resolutions, the two following resolutions being adopted unanimously:

Whereas, during the war with the Central Powers it was deemed necessary to co-ordinate all the resources of the nation under the control of the central government so that all means of production, transportation and finance should aid in the one definite end of successful resistance by the Allies and ourselves against our common foe, and

Whereas, recognizing this necessity, American business men gladly subordinated the direction of industry, transportation, and finance to government control and regulation,

Be it Resolved, that now that the war is virtually over and that success in the great struggle has been attained, we strongly demand that all governmental restriction on private business not hitherto found necessary in times of peace, be removed, and that the control of American business be returned to American business men whose enterprise and patriotism has been demonstrated during the war,

Whereas, certain economists and labor leaders have urged that radical reduction be made in the hours of labor, and consequently in the output of industrial plants on the plea that more men and women would be employed and thus unemployment be reduced, and

Whereas, it has been proved by the experience of industry ever since labor-saving machinery was introduced that increase of output, however caused, has resulted in the lowering of cost and thereby increasing the consumption of the article produced, which higher efficiency has resulted in a larger number of persons being employed at higher wages,

Be it Resolved, that we regard any declaration that decreased output will be for the eventual good of employees as a whole, or of any group of employees, to be

an economic fallacy, believing that America can best prevent unemployment by increasing its production and lowering costs of manufacture so that steady work at high wages can be provided for the greatest number of its citizens.

Be it Resolved, that the further development of the country and its resources and its success can never be accomplished by limiting its productive capacity, and that to this end every effort should be made to increase the ability, capacity and earning power of individuals, thus keeping them contented and teaching them that this country is the best in which to live.

The secretary then read the report of the committee on nominations which was as follows: President, W. Frank Shove, Fall River; senior vice-president, Russell B. Lowe, Fitchburg; junior vice-president, James Thomson, New Bedford; director, Morgan Butler, New Bedford; director, Lewis Dexter, Jr., Manchester; director, A. W. Dimick, Providence; director, John E. McLoughlin, Utica; director, John Skinner, Easthampton.

The gentlemen named by the committee were unanimously elected by the association. The session then adjourned.

The Banquet.

The banquet was served in the grand ballroom of the Biltmore, between 400 and 500 members and guests being present. Music was furnished by an orchestra in the balcony, and the room was adorned with flags of the United States and the Allies. President Shove presided as toastmaster, and introduced the Hon. Francis P. Garvan, Alien Property Custodian, who spoke on

The Hidden Side of the War.

I regret very much indeed that I am unable to speak to you in the spirit of gayety and good cheer which I see expressed in all your faces here tonight, but I have been engaged for nineteen months in a study of German industrial life and its manifestations and activities in the United States, and I come here tonight to give you as briefly as I may a few of the incontrovertible facts which my experience has made clear.

First and foremost, be it understood that this was an industrial war, brought on by industrial Germany in her lust-mad haste to capture the markets of the world. Industrial Germany in its arrogance and pride preferred the formidable hazard of battle to the progressive and sure infiltration which within ten or twenty years might well have given her the world dominion she sought from complacent and unthinking peoples.

Industrial Germany was in control of Imperial Germany. Industrial Germany sympathized and participated in the preparation for this war. Industrial Germany waged this war. Industrial Germany was the first to see defeat and forced the military peace, in order that with her industrial equipment intact she might continue that same war by intensified and concentrated economic measures.

Her ambitions are the same in pease and in war. Her methods are the same in peace and in war. Destroy your business competitor by state aid, cartel combination, dumping, full-line forcing, bribery, theft of patents or inventions, espionage, and propaganda! Destroy your military adversary by tearing up sacred treaties, by unlicensed and unbridled submarine and poisonous gas warfare, by the destruction of factories, mines and vineyards, by terrorism and vandalism!

You or I have yet to hear of one word of a change of heart or purpose; one word of regret or shame; one word of dispraise for any leader in the past holocaust. On the other hand, hold to the fact that at this moment the four men best fitted to conduct a ruthless economic war upon this country, the four men who planned, instigated and paid for all the black history of lawlessness under which we suffered for two and a half years, Dr. Albert, Dr. Dernberg, Captain Boy-Ed, and von Bernstorff, are the helmsmen of the present German government. Dr. Heinrich Albert is now under-secretary of state; Herr Bernard Dernberg, is now minister of finance; Boy-Ed is director of the intelligence section of the foreign office, the espionage and propaganda division; and that arch-criminal, Bernstorff, is over them all, directing and leading the new government in many of its departments.

Has the war ended for you?

It was Germany's chemical supremacy that gave her confidence in her avaricious dream of world empire. It was Germany's chemical supremacy that enabled her to wage four years of pitiless warfare. And it is Germany's chemical supremacy upon which she relies to continue this war; and for that supremacy she pays homage to the dye industry, and counts upon that dye industry to maintain it.

Since 1866 Germany has recognized the fact that upon the development of the dye industry rested her entire development of organic chemistry, that upon the development of organic chemistry rested, in an ever-increasing measure, all the developments of modern business, and modern warfare.

And so she cherished the industry with wisdom and provision while it was still in its childhood, and by her patience, by her persistence, by the willingness of her people to sacrifice in unselfish cooperation, she has gradually transformed the plans made in 1866 into the reality of today.

She realizes that her dye industry constitutes her keenest wedge with which to force her way back into the world trade. She now calls the dye industry her chief "Protective Industry," and has laid out for it a program of state protection and aid which should startle us. She proposes to use the alleged necessities of the world for her dyes to force all her other exports. In other words, she proposes to use it as a club with which to fight her way back into commercial society.

Prior to the war the German dye industry was united in three cartels with some independent companies outside. All are now one monster cartel, the I. G. Company, with Mr. Weinberg, the old head of the Cassella Color Company, as its president, and a capitalization of hundreds of millions of dollars. Germany has taken it under state aid and protection; she has decided to establish a guaranty fund whereby all industries share the losses the cartel may be compelled to face through dumping, bribery, or other expense incurred in reasserting her dye monopoly of the world. She looks forward to granting it export trade premiums, freight rebates, intensified consular service, and state guarantees against labor troubles.

As a result, our young but vigorous industry stands here today in direct competition, not only with the great cartel I. G., but with the great cartel sustained and supported and subsidized by the entire strength and wealth of the German kingdom.

Over three billion dollars of annual business in America, including yours, are dependent upon the dye industry. Is there any doubt that the destruction of the American industry means your enslavement to that cartel, and your

destruction when it becomes the whim of that cartel?

For years that three billion dollars of annual business was dependent upon the graciousness of German ambition. The time has not come when it seemed to their self-interest to cripple or destroy it, but when the war came on in an instant Germany felt the force of your dependence and attempted to use your necessities to influence the policies of your government. There was a considerable period when Germany could have relieved your distress; but would not. There was a period thereafter when her branches here might have assisted you; but they would not.

Listen! April 25, 1915, Boy-Ed, of ill-smelling fame, writes to Albert: "Very Honorable Privy Counsellor. Today's *World* prints the enclosed short article on the alleged erection of dye factories in New Jersey by Germans. In case you are not able to take any steps to prevent an undertaking of this kind, I am requesting you to indicate to whose attention I could call the matter. With greetings, etc." Signed, Boy-Ed.

Albert answers, April 28, 1915: "Very Honorable Captain: With regard to dyes, I got into touch with local experts in order to determine what truth there is in the news. According to my knowledge of things, the matter is a fake inasmuch as our factories have bound themselves orally and by word of honor to do nothing in the present situation which might help the United States."

Thank God! That day your independence began. That day your industry was born. And supported by you with loyalty, patience and sacrifice, it has grown until today $450,000,000 is enlisted in the cause and we see the end forever of the past slavery and we stand unafraid in the face of any threat.

But even greater than the importance of the dye industry in commercial life is its absolute necessity in modern warfare. I quote from Dr. Schweitzer:

"In no other field has German efficiency proven its superiority as in that of chemistry. While this was anticipated before the present war, it is no exaggeration to state that the German chemist has so far contributed as much, if not more, to the success of the campaign than the strategist, the army and the navy, and that, therefore, the present holocaust may be justly called the 'chemists' war.'"

Eighty per cent of her explosives and all her poisoned gases were manufactured by Germany's dye factories.

And does anyone for a moment imagine that you are going to handle, or that the women of America are going to buy or wear the by-product of the destruction of their 70,000 sons?

A commission appointed by the Allied governments has just reported to their respective governments: "At first, chlorine and phosgene were the main requirements, but afterwards a variety of organic substances were employed, all of which were made by the factories of the I. G. combination, and many of these were new and difficult to prepare, and rapid production was only possible owing to the speed with which the peaceful organization of the dye factories could be utilized for these purposes. When the government wished to introduce a new gas, a conference of the various firms was held at Berlin to determine how the manufacture should be subdivided in order to use the existing plant to the best advantage. For instance, the initial stages of the manufacture of mustard gas were carried on at Ludwigshafen, and the final stage at Leverkusen."

They go on: "In the future it is clear that every chemical factory must be regarded as a potential arsenal, and other nations cannot, therefore, submit to the domination of certain sections of chemical industry, which Germany exercised before the war. For military security it is essential that each country should have its chemical industry firmly established, otherwise we are leaving Germany in possession of a weapon which will be a permanent menace to the peace of the world."

The key to Germany's war production of explosives was the Haber process for the production of ammonia from atmospheric nitrogen. Without such a process Germany could not have made the nitric acid required for her explosive program, nor obtained fertilizers for food production after the supply of Chile saltpetre had been stopped by our blockade, and it is probable that she could not have continued the war after 1916. In the event of another war, we might be cut off from the supplies of saltpetre, while Germany would be independent of them."

Gas warfare, and its development, even if forbidden by the League of Nations, cannot safely be left in German hands, and organic substances will be employed which we do not know today. Any country without a well developed chemical industry is in danger.

Useless your armies and your navies, your U-boats and your aeroplanes, unless by means of a developed dye industry you keep abreast with modern chemical warfare.

But this industry has had, and now has, another great function in Germany's machine. It was, and is, the basis of her espionage and propaganda system.

True it is that we had in this country the Orenstein Arthur-Koppel Company, a German concern owning a large plant at Koppel, near Pittsburgh. The chief business of that company was the manufacture and installation of what is known as "inside transportation," that is, narrow gauge railways, dump cars, traveling cranes, and machinery of a similar sort used in large industrial plants. It was the American branch of a great German house with connections in all the great countries of the world. For twenty years it has put in bids based upon the plans and specifications of every big industrial plant built in this country; and for that same twenty years, blueprints of these specifications and floor plans and elevations have gone on file in the government office in Berlin.

True it is that in this country we had eighteen branches of German insurance companies, largely engaged in the reinsurance business; and that these companies collected for their own use detailed plans of all property insured by them with especial reference to the hazard of the insured buildings from fire, explosion or other causes; and duplicates of these plans and drawings also found their resting place in the Berlin office. And we wondered at the accuracy of our factory fires and explosions!

True it is that Germany, through the Bosch Magneto Company, the Eisemann Magneto Company and the Boonton Rubber Company had a practical monopoly of the ignition systems in America, and through this combination the files in the central office in Berlin were kept up to date with all plans and improvements in military trucks, gasoline boats and aeroplanes.

Let me read you Manager Otto Heins' report to Dr. Albert of the activities of the Bosch Magneto Company in this your country, at that time neutral:

"Honored Mr. Albert: In connection with the obstruction policy upon which we agreed at the beginning of the

war in matters concerning deliveries of our products, especially the special magneto apparatus, I should like in the following to make several statements from which one will clearly see that the accomplished obstruction policy has in every way been successful. In short, we had great difficulty at the beginning of the war in withholding the much-needed special aeroplane apparatus from the Allies, and in preventing the Allies, especially the English, from immediately attempting to manufacture them for themselves. Special apparatuses are involved in flying machines, airships and speed boats. These apparatuses are very different from the normal apparatus used on automobiles and motorcycles. We have freely supplied them with ordinary apparatuses; but, *in accordance with our agreement*, we have entered into apparent negotiations with the representatives of the Allies, creating in their minds the impression that they would receive also the special apparatuses at the present time. These negotiations began immediately after the first declaration of war, and it was possible, on account of their technical character, to extend them many months into the war. Our policy lulled them into the certainty that they would receive the special apparatus and only now, November 30, fifteen months after war began, have they realized our duplicity."

He goes on to state that this policy has been carried out despite the fact that these contracts were in many instances subcontracts with American firms; and he gloatingly continues that as a result of his activities in this country, England in October, 1915, found herself unable to defend London against their air raids, and states that France was in a much better position to protect herself against air raids because of her confiscation of the Bosch factories in Paris at the beginning of the war. I wonder how many women and children were killed!

True it is that the Hamburg-American Line and the Nord Deutsche Lloyd kept faithful tab for Berlin on a thousand details of our business life which came under their observation; that not a ship left our harbors, nor a cargo was loaded or unloaded, but that some member of its organization watched and reported every detail to be sent by code to the German government.

But greater than all, and forming the foundation of her entire espionage and propaganda system, stood the dye industry. Her trained observers enjoyed full access to the businesses they supplied, and regularly and faithfully reported each and every detail of the three billion dollars of annual business dependent upon the dye industry in this country. As long as you were supplied by the "Big Six," your business had no secret unknown to Berlin. In Berlin you will find a card index system which recites every fact connected with each and every one of your concerns that can be of any possible value to your rivals over there.

The head of that system in this country for years before the war was Dr. Hugo Schweitzer, president of the Bayer Company. He was given his Secret Service number by the Imperial Minister of War, 963,192,637. He came to this country, became a citizen on the instruction of the German government, eventually was made the head of the Bayer company, and led the espionage and propagandist movements here down to the day of his sudden death in November, 1917. His regular reports to Germany are the story of your pre-war slavery and the story of the activity of each and every representative connected with the old "Big Six" to perpetuate that slavery. When Albert came here, to assume the leadership of that system, it is to Schweitzer he first turns. And then we find Schweitzer bringing to Albert's office from day to day those other smiling gentlemen who have been selling you the "peerless dyes" in the past, and from that moment begins the period when Germany's trade outposts in this country turned into ministers of lawlessness and destruction.

A word or two of his activities. Schweitzer was the inventor of the idea of the purchase of the New York Evening Mail. Schweitzer was the inventor of the idea of the German Publication Society, formed to publish, for our delectation, the literature of German Kultur. Schweitzer, with Henry Weissmann, president of the German-American Alliance, we see forming the Printers and Publishers' Association, another attempt to create an English-language newspaper to present Germany's side of the war. Over thirty trained chemists, his lieutenants, are now interned.

We find Albert, about to go home, in January, 1917, turning over to Schweitzer $1,178,882.08; and again, on February 2, $300,000 all to be spent in espionage and propaganda. We find Schweitzer using the chemical branches of the "Big Six" in this country to form the Chemical Exchange, by which all available phenol supply in America was turned away from the manufacture of picric acid for explosives for the Allies, with a profit, out of America's pocket, to Germany of $1,650,000.

Listen to Albert's praise:

"The breadth of high-mindedness with which you at that time immediately entered into the plan has borne fruit as follows: One and a half million pounds of carbolic acid have been kept from the Allies. Out of this one and a half million pounds of carbolic acid four and one-half million pounds of picric acid can be produced. This tremendous quantity of explosive stuff has been withheld from the Allies by your contract. In order to give one an idea of this enormous quantity the following figures are of interest:

"4,500,000 pounds equal 2,250 tons of explosives. A railroad freight car is loaded with 20 tons of explosives. The 2,250 tons would, therefore, fill 112 railway cars. A freight train with explosives consists chiefly of 40 freight cars, so that the 4,500,000 pounds of explosives would fill 3 railroad trains with 40 cars each.

"Now one should picture to himself what a military coup would be accomplished by an army leader if he should succeed in destroying three railroad trains of forty cars, containing four and a half million pounds of explosives.

"Of still greater and more beneficial effect is the support which you have afforded to the purchase of bromine. We have a well-founded hope that, with the exclusion perhaps of small quantities, we shall be in a position to buy up the total production of the country. Bromine, together with choral, is used in making nitric gases which are of such great importance in trench warfare. Without bromine these nitric gases are of slight effect; in connection with bromine, they are of terrible effect. Bromine is produced only in the United States and Germany. While, therefore, the material is on hand in satisfactory quantities for the Germans, the Allies are entirely dependent upon importation from America."

Gentlemen, did you intend by your support of the German dye industry to leave the Allies defenseless against the poison gas made by that German dye industry?

(*Continued on page* 531.)

The Third Southern Textile Exposition

The attendance at the third Southern Textile Exposition, which was held at the Textile Hall in Greenville on May 5-10 inclusive, was fully up to the expectations of its promotors and directors. The absence of heavy machinery exhibits was amply compensated by the greatly increased number of specialties and many of the specialty men present stated at the close of the week that the show had been, from their standpoint, one of the most successful expositions they had ever entered. Comment was also made by many visiting mill men that they were much more interested in the specialty proposition at the present time than they were in what might be called the staple machinery of cotton manufacture.

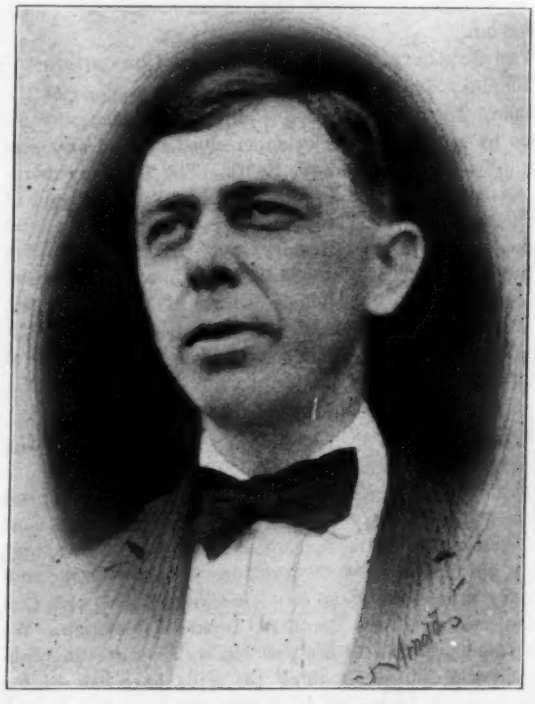
Some complaint was heard concerning the manner in which the decorations and signs were handled, but the management gave assurance to those who took the matter up with them that arrangements had already been made to handle the matter in a different manner at the next exposition and Mr. John A. McPherson, who is vice-president of the Exposition Company, and one of the directors of the present show, expressed a wish that all exhibitors who had suggestions or ideas concerning a better handling of any particular feature of the show would write to him expressing the suggestions so that the committee for the next show would have something tangible to work upon thereby greatly increasing the efficiency of the various committees in the preparation and handling of materials for exhibit.

One of the special features of the third show was the very excellent band music furnished by the Gossett Band, which is one of the crack bands of the 30th, or Old Hickory Division, that has just returned from overseas. This band gave regular concerts on the stage of the main auditorium on the second floor every afternoon and evening.

The Southern Textile Association meetings were held in the roof garden on the top gallery floor and this space was also utilized every night after ten o'clock for dancing purposes, music being furnished by the city orchestra.

On Tuesday of show week, a special Rotary Club luncheon was given in the main dining room of the Imperial Hotel in honor of the return of Major G. Heyward Mahon, Jr., of the 30th Division who was severely wounded overseas. Major Mahon was vice-president of the Rotary Club, and after luncheon was over, and during the exercises that followed, a handsome and suitably engraved pitcher was presented to him by the Rotary Club members of Greenville, the presentation address being made by "Johnny Holmes," secretary of the city Y. M. C. A., who told Major Mahon of the many suggestions he had received from the different Rotarians as to the proper things to use to fill this pitcher and concluded by advising that it was finally decided to fill it by pouring into it the love, respect, friendship and good wishes of his Rotary associates in Greenville, and the great quantity of these that were pouring in would keep the pitcher overflowing throughout the lifetime of its recipient. Major Mahon arrived home on Textile Week for the first time since he went overseas as commander of the first battalion of the 118th Infantry of the 30th Division. Wounded severely a number of times, he spent some time in a hospital at the front, and for the past several months has been in a New Jersey army hospital undergoing a number of serious operations.

The principal speaker of the luncheon was B. E. Geer, president of the Southern Textile Exposition, Inc., and president of the Judson Mills of Greenville. Mr. Geer declared that the growth of the southern textile mills was many times greater than those of New England and declared that New England mill men hesitated about expanding their business while facing unsettled labor conditions. He pointed to the unprecedented wealth and prosperity that is now being enjoyed by the textile industry in the southern states and of the great strides that are being made in this industry in bringing the mill plants up to the highest standards of efficiency and providing for the comforts and welfare of the operatives in the mill villages.



PRESIDENT A. M. DIXON.

In conclusion he expressed a belief that the growth of the Southern Textile Exposition would keep step with the textile industry in the South, and that the world could look forward to the Southern Textile Exposition as becoming of international importance. He was followed by David Clark, president of the Charlotte Rotary Club, who spoke along similar lines.

Another impressive feature of the luncheon was the presentation of gold watch fobs to other returned citizens of Greenville who had been engaged in war work, including Lieut. Luther McBee, Col. E. M. Blythe, Lieut. V. M. Manning, and Capt. Charles Gower.

On Wednesday afternoon members of the Rotary Club and others furnished automobiles which provided the means of transportation for taking a large number of the visitors around the city and to the San Souci Country Club which

is located in a beautiful spot within sight of the Union Bleaching and Finishing Company's plant. Owing to the severe rainstorm that afternoon, little was accomplished on the golf course and the majority soon returned to the exposition hall.

On Wednesday and Thursday nights a special pageant was presented by the Y. W. C. A. entitled "We Come, America." This occupied the large stage in the main auditorium of the Exposition Hall and the presentation was made not only by the local Y. W. C. A. but also by the Y. W. C. A. and the Patriotic League Clubs of the local mills. This pageant began at 9:00 o'clock under the direction of Miss Mathilde Vossler.

A golf tournament was staged for Friday morning on the courts of the San Souci Country Club. The morning was selected for this in order to, if possible, avoid the afternoon showers that had been a regular proceeding during the entire week. However, the weather man changed his mind on Friday and gave them a beautiful shower in the morning with the result that some of the golfers had the appearance of having been in swimming with their clothes on.

The Southern Textile Association Convention.

Thursday and Friday brought the two sessions of the Southern Textile Association Convention, which was attended by a large number of superintendents and overseers from different sections of the South. The Thursday morning session was called to order at 11:15 with President Dixon in the chair. The address of welcome on the part of the city by Mayor Harvley was transferred to Allen J. Graham, president of the Mills Mfg. Company of Greenville, owing to the unavoidable absence of Mayor Harvley. W. M. Sherard, vice-president of the Glenn-Lowry Mfg. Company of Whitmire, S. C., responded to this address of welcome on the part of the visiting mill men.

President's Address.

President Dixon then addressed the convention, saying in part:

This association has made its mark in the development of the textile industry of the South. It has been a most important factor in the development along these lines, and, in my opinion, the future development of the cotton mill industry in the South is very closely entwined with that of the success of the Southern Textile Association. We have faced problems in the past but we have greater problems in the future. I think the mills have catered too much to home trade; we have not gone out ofter foreign trade as we should. We are going to supply the South American countries and we are going to cover the world. I am an optimist; I am a bull on the United States, as it were, and I believe we are going to have an era of prosperity such as we have never had before. One thing this war brought out and that is that the boys that labored in the cotton mills in the South responded to the call of duty. There has never been a class in the whole country that has been more maligned than those who work and live in the cotton mills of the South. I want to tell you that the stand those boys took when the war came on makes me proud that I work in a cotton mill. The record they made is a record that we can look back on with pride and satisfaction. Caesar had his tenth legion, Napoleon his Old Guard, and I am here to tell you that General Pershing had his 30th Division.

My friends, far be it from me to detract in the slightest from the record of the boys of this country in the war, but there are those who suffered more than they did. That mother who suffered the agony of childbirth that he might be born, that mother who when he was a child tied up his bruises and kissed the pain away, that mother who watched him grow up from a toddling boy to a man, that mother when the call of duty came from the terrible war-stricken Europe said "Go." My friends, when he lay wounded on the fields of France he suffered but she suffered more, nothing that she could do except lift up her supplication to God Almighty, and if I were to make a toast today I would make this toast: "Here is to the mothers of the men who broke the Hindenburg line." (Applause.) My friends, some of those boys are back, others are coming back, some are coming back hale and hearty, some are coming back wounded, some gassed, some blinded, some will never return—they have paid the supreme sacrifice, and lie buried on the hillsides and in the valleys of France, out of the din and strife, out of the agony, into the glory which never fails. My friends, those boys have not died in vain; they died for you and they died for civilization, they died for Christianity, they died that liberty might not become a memory; but my friends, they will have died in vain if this spirit of bolshevism which seems to be spreading over the world today is not checked. That terrible menace of bolshevism will never become rampant in the South for the reason that the splendid men of the Thirtieth Division who with the immortal Twenty-seventh broke the Hindenburg line and will stand firm and ever ready with the same determination to conquer or die. Those liberty-loving men will never permit the poison of bolshevism to come over our Southland, which is all American, and, thank God, shall always remain so.

My friends, I want to say that I highly appreciate the honor conferred upon me in making me president of this association and I want to say that the success of this association during the past year has not been due to my efforts but to that close spirit of cooperation which has existed among the members of the Southern Textile Association.

Mr. Lewis, an agent of the treasury department, then spoke briefly urging thrift among mill workers and advocating War Savings stamps.

The convention then adjourned until 11:00 a. m. on Friday when on the call of President Dixon, W. W. Cobb read an interesting paper on "Spinning" which will be found on another page.

Prof. Doggett of Clemson College addressed the convention on educational subjects.

Harry Stephenson of the Union Bleaching and Finishing Company then spoke on

Preparing Cloth for Bleaching.

saying in part:

I am glad of the opportunity offered me of appearing before you today to say a few words about putting up unbleached cotton goods or grey goods, as we know them, from the viewpoint of the finishing works. I say I am glad of the opportunity, because I believe I can express a few thoughts based on practical experience that will be of benefit to those of you who are in charge of putting up these goods, and, also, a benefit to us at the finishing works, who have to handle them afterwards. Your finished product is our raw material, so what is the last process to you in putting up the bales, is the first process with us when we

come in contact with them, namely, the marking on the outside of the bales.

The company I represent holds membership in the National Association of Finishers of Cotton Fabrics, which association holds monthly meetings in New York. At these meetings from time to time every phase of the finishing industry is considered in one form or another. At a recent meeting, the matter of bales being lost and going astray was considered, with the result that the association circularized every cotton mill in this country, urging on them the importance of clearly marking every bale, to show, first, the name of the mill putting up the goods, second, the bale number, third, the yardage in the bale, and last of all the construction of the goods contained in the bale. In addition to this, there should be packed in the bale a slip showing all the information above stated, together with the detailed yardage of the bale. If this plan were carefully followed in every instance, we would say that there can be no such thing as even a single bale of goods becoming lost or going astray.

Of secondary importance, but in the same line of thought is the marking of the yardage on each piece of the goods. We frequently find this is so indistinctly done as to render correct reading impossible. It is also important that this yardage should be marked on the pieces with a pencil that is not indelible. We have known instances where an indelible pencil of such a nature was used that the marks withstood the bleaching process and showed on the goods when ready for packing in the finished state.

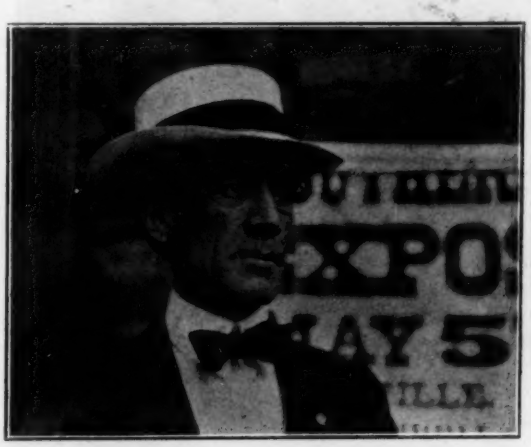
Those of you who make goods which go exclusively to finishing works have probably learned by experience that of the many troubles encountered by finishing works, one of the most annoying and time consuming as well as costly to production is the practice of folding two short lengths into one piece or splicing the goods as we call it. The first process in a finishing works consists of sewing the pieces of grey goods together into one continuous length of something like twenty-five or thirty miles, such length depending, of course, on the weight of the fabric. After this sewing has been completed, the goods are started into processes at a high rate of speed. If the goods have every appearance of being full length pieces and are sewed accordingly and then prove to be short lengths, you can readily see that this will mean continuous stoppages of an entire department while getting these ends together and sewing them as they would have been sewed in the first instance if they had not been spliced. I believe all finishing works, without exception, will feel that if a mill should put up goods that they first think are going to be sold over the counter (in which case, the splicing is not objectionable) and afterwards find that the goods are going to a finishing works, such mill should go to the trouble and expense of repacking these goods in order to have each piece folded separately.

We have occasional instances where the cotton mills undertake to sew short lengths, by which we mean pieces 20 and 40 yards, into full lengths or double cuts. While no doubt the seams the mill would make in such instance would usually stand the cotton mill processes, it is quite a different proposition when they must hold up to the tension necessary in a finishing plant. We have rarely found cotton mill seams that are sufficiently strong for this purpose. Not only do such seams often lack strength throughout, but more frequently, the seams are not carried fully across the cloth from one selvage to another.

Possibly there is nothing I could say about grey goods that would be of quite so much interest to you as oil stains and their removal. In that line I am afraid I shall have to be somewhat of a disappointment to you, because I am unwilling to go on record either as approving or discrediting any of the various patent preparations marketed for the purpose of removing oil stains. No doubt, first and last, we have had going through our plant many pieces of cloth on which a great many different kinds of these preparations have been used. As a rule this is without our knowledge, and we, therefore, have not had occasion to closely check up the final result due to the use of these preparations. There is only one recommendation or warning I would like to give in connection with the use of these preparations, and that is, that when the cloth has been well wet with this material at the point where the oil stain exists, such place should be allowed to become thoroughly dried before the piece is folded for packing. We have found a number of instances of mildew and consequent damage where the goods were folded while still wet in one or more places.

There occurs to me only one other matter that I might bring to your attention, which after all has to do with only the manufacturing end and not with the packing of the goods afterwards for finishing.

There are many millions of yards of light weight middy



J. S. COTHRAN.

twills as we know them, ranging from 4.00 to 5.25, in 39-inch width, which on account of their light weight and low count must be produced in what we know as backfilled finish. In this finish it is almost or quite impossible to obtain as good results when the goods are woven with a wire selvage as when woven with a tape selvage. This is due to the fact that the wire selvage in spite of every known precaution has a tendency to curl at certain stages of the process, which not only produces at that point a finish that is not satisfactory and is dissimilar from the balance of the finish, but is most likely to cause an actual damage and loss in yardage.

Our company follows the policy of guaranteeing a specific outturn in finished yardage. The difference between the guarantee we are able to make on these light weight twills as between those woven with wire selvage and those with a tape selvage is from 1 per cent to 1½ per cent in favor of the tape selvage. This difference, particularly with high priced goods, such as we have had for so long a time, would make it well worth while, I should think,

for mills making these fabrics to give serious consideration to installing throughout the tape selvage attachment.

After some discussion the following officers were elected for the ensuing year: President, F. Gordon Cobb of Greenville; vice-president, Harry H. Boyd of Charlotte; secretary, A. B. Carter of Greenville; treasurer, Marshall Dilling of Gastonia; chairman of the Board of Governors, Gordon A. Johnstone of Atlanta; additional members of the Board of Governors to be elected at this meeting, A. A. Harris of Sycamore, Ala.; T. M. McNeil of Union, S. C.; I. B. Covington of Fort Mill, S. C., and D. W. League of Greenville.

At the invitation of David Clark in behalf of Charlotte, N. C., it was voted to hold the fall meeting in that city.

George S. Harris of Lanett, Ala., started a discussion on

PRESIDENT ELECT F. GORDON COBB.

the subject of "half and half" cotton that aroused much interest.

I. B. Covington, on behalf of the association, presented the medal to the retiring president, who then introduced President Elect Cobb into the chair. President Cobb addressed the convention briefly saying in part:

Just yesterday and today I have made a few points that I wish to give you as food for thought. First, I believe that the membership in our association is one of the most important assets an overseer or superintendent has. Suppose we compare an overseer or superintendent to a three-legged stool; one leg of that stool may be compared to the man's work in the mill, another might be compared to the relation between him and his immediate employer, and I think the other leg may be well compared to his membership in this association. I believe it is a well recognized fact that a child's environment has a great deal to do with his future life, and so does a superintendent's or overseer's environment have a great deal to do with his future success. If our employers are interested enough to spend money on us in sending us to these meetings we certainly must take back knowledge that will be of benefit to our job, otherwise that money will be wasted.

Now, for a question: Never before has labor been as magnificently treated as during the war. Is the effect gratifying or disappointing to those who have set up these model conditions? Workers have been treated to clubs, free lunches, free house rent, free lights, free amusements and I have heard of an incident where they gave them flour. The rate of turn-over is one of the greatest expenses in a mill. Cannot we devise some plan or system to reduce this rate of turnover? The most efficient and also the most prosperous employees are not those who move from mill to mill. Would a wage system graduated according to the time of service be of benefit to both employer and employee? Understand, I am here asking the questions, but this association was founded to thresh out just such problems as these.

We, as overseers and superintendents, I believe, need more initiative. The demand is for the initiator; it is for leaders, not followers. Any overseer or superintendent can drift along with the crowd. This association was founded to make us better overseers and better superintendents. That's what we are trying to get started and we are going to get it started.

Ideas are the most valuable commodity in the world today. I want to say that once more: Ideas are the most valuable commodity of the world today. The Southern Textile Association should be a clearing house for ideas. Let us stick to the practical problems in the mill. Let us make a membership in this association something to be sought for rather than to have our secretary working his head off in seeking membership.

I firmly believe there is a new era ahead for the textile industry. Let us prepare for it through this association. Let us stick to the association and show that we are overseers and superintendents who put initiative in our work and that we can meet the changing conditions which confront us from day to day. (Applause.)

President Cobb then announced the names of the chairmen of his "Rount Table" committees, which were as follows: Carding—Marshall Dilling, Gastonia; Spinning—J. B. Harris, Greenwood; Weaving—A. T. Quantz, Rock Hill; Finishing—Harry Stephenson, Greenville; Power and Lighting—S. B. Rhea, Greenville.

The president then introduced Ward Harrison of the National Lamp Works who spoke on

The Proper Lighting of Textile Mills.

saying in part:

Of all the factors that go to make up general industrial efficiency, proper illumination of work plays by no means a small or insignificant part.

There was a time when a factory owner or engineer said: "O, well, stick in almost any old thing, just so they can see!" This attitude, however, does not apply to a modern industry. One of our mill authorities has estimated that the average spoilage in the textile industry amounts to about 2½ per cent. No doubt a large part of this spoilage is due to improper illumination, causing misread orders, and allowing a faulty weave to run beyond repair. There was a time, and perhaps some of you can remember

it, when the same kind of goods made in summer commanded a higher price than those made in winter, because there were not nearly so many seconds. The longer days and better illumination, no doubt, played a large part in this.

Proper illumination undoubtedly has its place as a real time saver. Our modern machines automatically stop when the thread is broken. This thread can be found much more easily and quickly if we have the proper illumination than if the operative must hunt around for a drop cord, or extension, to look for the broken threads. There is time saved in moving about with the proper illumination. With a drop cord the work may be properly illuminated, even may have too much light, so that when the weaver undertakes to go elsewhere the accommodation of the eye occurs slowly, and until this accommodation takes place, he is groping in the dark. One attendant can attend to a number of machines and watch their production much better under a good even system of lighting than under spotty or inadequate illumination, caused by improper design. Operations such as spinning, weaving and finishing require keen eyesight by the operatives and it goes without saying that proper illumination is a time-saver with them.

Following the address of Mr. Harrison came an instructive paper on Starch and Its Uses by P. W. Allen in charge of the Research Laboratories of the Douglas Company, Cedar Rapids, Iowa. This appears in full on another page of this number.

The session then adjourned and the members, remaining in their seats, were served with a delightful luncheon. While the serving was going on the Southern Textile Social Workers Asociation, a new organization which had been founded by its membership while the mill men were holding their meetings, filed into the room, led by their president, L. P. Hollis, director of welfare work for the Victor-Monaghan Mills. They also shared the luncheon and a jolly time was had by all.

Among the Exhibitors.

There were some exhibits at the show that were not fully covered in the May number of COTTON owing to the descriptions being received too late to catch the forms of that number. Therefore some further exhibit notes follow:

E. J. RITCHIE.

The Sarco Company, Inc., exhibited in Booth 247 the Sarco temperature regulators, which are now being used very extensively in textile mills to control the temperature of size kettles and slashers. They also showed their regulators for atmospheric control These regulators are constructed on the same principle as the well-known Sarco steam trap. They use a heavy hydrocarbon oil, hermetically sealed within a tube, to operate a packless valve.

This type of regulator is entirely self-contained and self-operated. It requires no exterior source of power. It is merely necessary to connect the valve in the steam line and insert the thermostat in the tank, or in the case of atmospheric control to suspend it in some convenient position on the wall.

Regulators of this type are claimed to be extremely accurate and have been extensively adopted for the control of quite delicate operations, including powder drying tunnels and bacteriological incubators.

The Sarco Company also showed steam traps of the expansion type. Their exhibit was in charge of E. J. Ritchie of the New York office and L. W. Cuddy, the southern representative.

The Westinghouse Lamp Company presented a very interesting exhibit, a large part of which was based upon their new mill type Mazda lamp with the filament supported by a separate wire which is intended to absorb the shock of any blow which the reflector may receive, or any vibration or swinging of the cord, and thereby prevent the breakage of the filament. They also presented a comparative exhibit inside of a suitable box arrangement showing the different lighting facilities afforded by a plain lamp and a similar lamp using an R. L. M. reflector. The contrast was so striking as to easily attract the attention of a visitor. Another feature of this exhibit was a series of transparencies showing the effects of good lighting in the mill. Representatives present were Robery Eley of New York, Henry T. Long of Charlotte and E. Carpenter of Atlanta.

The Taylor Instrument Companies of Rochester, N. Y., manufacturers of indicating and recording thermometers, and pyrometers, automatic temperature pressure and time controllers, hydrometers and coal oil instruments, and mercury vacuum gauges, had an interesting exhibit in charge of H. M. Barker of the Philadelphia office.

ALVIN LOVINGOOD.

Alvin Lovingood, president and treasurer of The Lovingood Company, Atlanta, Georgia, has been appointed southern manager for five large northern manufacturers of shipping room supplies. His eight years' experience in handling other interests for manufacturers of similar products give him a most excellent knowledge of today's shipping room problems.

The new organization is rather unique in its method as they do not job or handle as a dealer any of its representative products but they handle purely as a branch based absolutely on factory prices and principles.

"Better Bales, Boxes and Bundles" will be Mr. Lovingood's slogan and it is his purpose to aid the mill man in every way possible to bring about the most modern and economical methods for packing, securing, marking and conveying his manufactured goods.

Among the factory lines managed by Mr. Lovingood is that of the Signode System of Chicago, manufacturers of baling ties, all kinds of box strapping, bale tie buckles, and Signode nail-less strapping system. A complete stock of all these items are carried in the Atlanta warehouse of the Signode System.

It isn't necessary to introduce the Bradley stencil cut-

ting machine as it has been used for twenty-five years by the cotton mills throughout the country. Mr. Lovingood will serve the Bradley interests in the South as their southern manager.

In order to complete his factory lines Mr. Lovingood has been appointed manager for the the Steel & Wire Products Co., of Pittsburg, manufacturers of cement coated nails and roofing nails. Most of the mills use coated nails and it will be of interest to know that one of the largest manufacturers of coated nails in this country has opened a southern branch and warehouse in Atlanta, Georgia.

Logemann Bros. Co. of Milwaukee, one of the largest manufacturers of baling presses in the world, have secured Mr. Lovingood's services, also, to represent them in the southern territory. The high quality and dignity of the Logemann presses together with Mr. Lovingood's knowledge of the mill should be taken advantage of by the manufacturers in the southeast. "If it can be baled, we can bale it" is their claim. Hand, electric, hydraulic and belt driven bailing presses of all kinds are manufactured by the Logemann Company.

We have all learned a great many new stunts recently and one of the most universally adopted is that of tying warps on slasher machines by the use of slasher Gummed Kraft Tape. Mr. Lovingood represents as a branch the Rexford Paper Co., Milwaukee, Wis., manufacturers of slasher tape, waterproof papers, and stencil board.

"Better Packages" is the universal cry and any mill can secure the advantage of eight years' experience in the study of bales, boxes and bundles if they will call on Mr. Lovingood. For the convenience and service of the trade Mr. Lovingood will operate these branches under one name which will be known as the Lovingood Company.

J. E. HUMPHRIES.

John E. Humphries, who was in charge of the exhibit of the Dary Ring Traveler Company, of Taunton, Mass., at the exposition. Mr. Humphries was assisted by Charles L. Ashley of Atlanta. They were displaying spinning and twisting travelers in steel and bronze and distributing booklets, giving the numbers and weights of the different travelers made by this company. This booklet not only contained the weights and numbers but gave comparative tables thereon. The travelers made by this company are of the best imported stock and made by the most skilled workmen in every department. Another special feature of the Dary traveler that appeals strongly to mill men is the fact that a complete stock is carried on hand at the Manufacturers Warehouse in Greenville, S. C., so that immediate shipment can be made following the receipt of the order. Mr. Humphries was distributing boxes of matches and cigars as souvenirs.

The Curtis & Marble Machine Company of Worcester, Mass., builders of cloth room machinery, were showing a new style of cloth folder with square frames, simplex drop table and anti-friction cam levers which makes what they claim is the smoothest running folder on the market today. President Edwin H. Marble of the firm was in attendance during show week.

F. R. CHADWICK.

F. R. Chadwick, with headquarters at 213 Latta Arcade Building, Charlotte, N. C., does not need an introduction to the majority of the readers of COTTON, for the reason that during the past ten years he has been directly, or indirectly, associated with the sale and installation of textile mill accessories in the southeastern states.

Mr. Chadwick was in charge at the Oxweld booth, being supervising sales engineer for the Oxweld Acetylene Company.

The Oxweld Company conducted an actual demonstration to show the ease and economy of repairing all kinds of broken or worn textile machinery parts by means of the oxy-acetylene process.

This demonstration always drew a crowd because of its spectacular and instructive nature, but besides the mere entertainment of watching the sparks fly and seeing new forms created out of molten metal before one's eyes, there was an object lesson of vital importance to every textile mill master mechanic, superintendent and executive—a simple means for increasing mill profits.

The Oxweld process mends broken parts made of any of the ordinary metals, such as cast iron, wrought iron, steel, brass and aluminum. The process not only mends, but it entirely eliminates the presence of the break by completely fusing the metals. Such repairs are usually profitable in themselves, that is the cost of the repair is less than the cost of the new part, but very frequently an enormous further saving results from a prompt repair by reducing the loss from non-operation of interdependent machinery and consequent stoppage of production. Furthermore, capital invested in spare part stock becomes available for profitable investment in raw materials or new equipment, which means increased net profit.

A complete Oxweld welding and cutting unit, as it was shown at the Greenville convention, consists of a welding blowpipe with five welding heads for welding metals of different thicknesses, a cutting blowpipe with four sizes of nozzles for cutting various thicknesses of steel and wrought iron, regulators and gauges for attaching to the oxygen and acetylene cylinders, a hand truck for carrying the cyl inders and the necesary hose, tools and other accessories.

This type of oxy-acetylene unit, being portable and self-contained, is especially suitable for general mill use as it is quickly taken to the work and is ready for instant use.

A welding blowpipe is a high efficiency torch of the injector type. The acetylene is drawn into the combining tube by the injector action of the high pressure oxygen jet, in correct proportion to combine chemically with the oxygen, forming what is known as a neutral flame, that is, one having neither an excess of oxygen nor acetylene. Because of the special feature of design, Oxweld blowpipes are said to give unequalled results when used in connection with either high or low pressure systems of acetylene supply.

An Oxweld low pressure acetylene generator was also

on exhibit. This apparatus was recommended on the grounds of economy where most of the oxy-acetylene work is done at a central point or sufficiently near the generator so that the cost of piping acetylene is not prohibitive. It embodies all of the requirements for safe, reliable and automatic operation and has passed the rigid and exacting examination of the engineers of the National Board of Fire Underwriters and is on their list of Permitted Appliances which can be installed on insured premises.

WARD HARRISON.

Ward Harrison, illuminating engineer of the National Lamp Works, with headquarters at Nela Park, Cleveland, Ohio, besides having charge of the exhibit of the National Lamp Works at the exposition, also presented a paper on better illumination before the Southern Textile Association.

As a result of his connection with the National Lamp Works and his membership in various prominent societies, Mr. Harrison has contributed materially to the progress of the illuminating art in this country and to the literature which is being expanded so rapidly at the present time. He was born in East Orange, N. J., May 16, 1888, graduated from the Stevens Institute of Technology in 1909, ranking highest in his class, and the same year entered the engineering department of the National Lamp Works at Cleveland. By steady advancement, he acquired the position of illuminating engineer in 1914, which position he still holds.

Two of the main problems which have occupied a great deal of Mr. Harrison's attention are street and industrial lighting. In the Cleveland street lighting system he has clearly demonstrated how, by the use of crystal diffusing glassware, a scientific control of light can be effected even in fixtures of ornamental design. Another of his original developments is the Reflecto-Cap diffuser unit for reducing glare in industrial lighting installations to a minimum. His work has invariably shown an appreciation of the importance and possibilities of the aesthetic values in illumination design together with a characteristic insistence upon the application of thorough engineering methods to secure these desired effects most efficiently. As a result, he has been called upon to act in an advisory capacity to the architects and owners of practically every public and semi-public structure projected in Cleveland in recent years.

Mr. Harrison is a member of the association of Iron and Steel Electrical Engineers (where he has been in considerable measure responsible for present lighting practice in steel mills); the National Electric Light Association, National Commercial Gas Association, Electrical League of Cleveland, Jovian Order and the Tau Beta Pi Fraternity.

He was assisted at the exhibit by J. M. Ketch.

The exhibit furnished by the National Lamp Works was designed to give particular instructions regarding the proper selection and use of lighting systems for classes of work demanding a specialized type of illumination. One division of the exhibit consisted of a rack of lamps arranged to show late developments in the lamps themselves. This displayed lamps which are most generally employed in industrial lighting. Another rack showed the most approved reflector equipment for use with the lamps, including the Reflector-cap unit so well adapted for industrial plants where avoidance of glare is very important; the Ivanhoe Ace (1350), a late and very efficient design of the semi-enclosing type of unit, and the RLM dome reflector. To emphasize the need of proper selection, and to offer an example of bad practice, a flat reflector with a bare lamp was also shown.

Small exhibits were used to point out the result of some common faults found in lighting system design. One exhibit demonstrated the effect of improper intensities upon illumination; another, the effect of glare upon an otherwise satisfactory lighting system; and a third, the effect of shadow in the perception of objects in their three dimensions. A ribbon booth, illuminated with several different lamps, ranging from carbon to "daylight," was used to show the great variation in colors under artificial illumination and commercial work which require strict color discrimination.

To bring the advantages of modern industrial lighting at "productive intensities" before the eyes of the interested public by means of lantern slide projection, a stereomotograph was included. The foot-candle meter was displayed and demonstrated. This instrument is widely used to measure the illumination intensities commonly found in artificial lighting installations. It is an instrument so simple that anyone can operate it, so light and compact that it can be carried anywhere, and sufficiently accurate to be of real practical value. A selective chart which aids materially in the accurate selection of reflecting equipment, was also featured.

The Whitlock Coil Pipe Company of Hartford, Conn., presented a very interesting exhibit in the form of a typical steam plant in operation, the exhaust from the engine being used to heat the water in a storage heater, thus providing a hot water supply for commercial purposes throughout the plant. This is a very important feature in dye houses, bleacheries and other finishing establishments for cloth, yarn and knit goods. The exhibit was in charge of Chas. M. Setzer, of the Charlotte, N. C., office.

The Central Electric Company, 316-326 Wells Street, Chicago, Ill., was a new exhibitor at the show where they featured the "Maxolite" diffuser, which is a combination of enameled steel reflector and a dust proof globe effect, which completely encloses the lamp making it lint proof and producing a uniform light that is particularly easy on the eyes. They also showed R. L. M. standard reflectors. and receptacles for heavy duty work, locking sockets, and other electrical specialties. Those present at the exhibit were R. E. Perry, manager of the lamp department, and A. L. Arnberg, illuminating engineer.

The Jordan Mfg. Company of Monticello, Ga., and Toecane, N. C., presented a very attractive display of the bobbins, skewers, and other specialties which they manufacture. The excellent finish on these products attracted the attention of many mill men who frequently paused for an examination and later placed an order. A. D. Roper, secretary and manager of the Toecane plant, was in charge of the exhibit.

The Terrell Machine Company presented a new model Utsman quill cleaner with positive friction clutch. It attracted considerable attention on account of its construc-

tion and efficiency. They also showed a novelty in the way of an electric hedge cutter. E. A. Terrell, president, was in charge of the exhibit, assisted by O. L. Richardson.

Lockwood, Greene & Co., of Boston, Mass., and Atlanta, Ga., had a very attractively arranged space showing illustrations and photographs of their work on textile factory buildings, power plants and similar construction. Harry S. Roberts was in charge.

The Stanley Belting Company of Chicago, Ill., showed samples of imported solid woven belt in a single, double and triple ply. It is a belt especially well adapted for mills, dye houses, bleacheries, etc. C. E. Hathaway of Chicago, Ill., was in charge of the exhibit.

Cooper & Griffin of Greenville, the well known cotton brokers, had a bulletin board upon which was posted exchange quotations for the benefit of the visiting mill men.

J. M. Broom of Greenville was representing the Belmont Iron Works of Philadelphia, J. S. Thorn Co., of Philadelphia, and the Fabric Fire Hose Co., of New York.

Aldrich Machine Works of Greenwood, S. C., showed several textile applications of "Strom" ball bearings. This company makes these application for the mill and can furnish any necessary material and equipment. A. P. Aldritch, Jr., was in charge.

The Hopedale Mfg. Co., of Milford, Mass. demonstrated four automatic looms. Two of these were converted plain looms. One was a Mason loom utilizing much of their equipment. One was a new model automatic loom built in their own shops at Milford. This new model had much to commend it to the attention of the visitors who showed a lively interest in its working. Jonas Northrup, president; Clare H. Draper, treasurer, and Edwin Howard, southern agent, were present the entire week, assisted by a corps of assistants.

Convention Notes.

The new style warp tying machine shown by the Barber-Colman Company was different from former models of that machine in that it had no can in which to keep the rat.

O. S. Horton, manager of the Atlanta branch of The Edward R. Ladew Company, Inc., was a visitor at the show during the week.

Alvin Lovingood, president and treasurer of The Lovingood Company, 406 Peters Building, Atlanta, Ga., pulled a new stunt at the close of the show by notifying each exhibitor to call on Lovingood at booth 287 to strap and seal the cases of exhibits which these exhibitors were returning to factory or office. This was done without cost to the exhibitor.

Carleton E. Bauldry, director of the Textile Section of the Bureau of Standards at Washington, D. C., was a very much interested visitor at the exhibit, spending considerable time in looking over the various displays of equipment. Mr. Bauldry has charge of the new cotton mill recently installed at the Bureau of Standards where much careful research work is to be conducted for the future benefit of the textile industry.

Harry A. Burdorf was in charge of the exhibit of the Lunkenheimer Company of Cincinnati, Ohio, and was meeting the many friends of this well known company among the textile visitors present.

C. M. McClure, secretary of the Charlotte Leather Belting Company, of Charlotte, N. C., was one of the members of this organization who was present at the exhibit.

C. B. Seal, director of the A. French Textile School, at the Georgia School of Technology, Atlanta, Ga., was in charge of the exhibit of this school and present at the exposition during the entire week.

F. V. L. Smith, the southern manager of the U. S. Ball Bearing Mfg. Co. of Chicago, was in charge of their exhibit, and it is of interest to note that he was giving out a different brand of cigars. This was good news for some of his friends who were pleased with the change.

Robert F. Bowe, of the Hunter Mfg. & Commission Company, 58-60 Worth Street, New York City, had charge of his company's exhibit. He was accompanied to Greenville by Mrs. Bowe. It is needless to add that the Hunter Company's booth proved exceedingly attractive to visiting mill men.

W. C. WALDO.

W. C. Waldo, manager of the Textile Counter Division of the Veeder Mfg. Company of Hartford, Conn., was kept very busily employed during the show week, demonstrating the very attractive and efficient counters manufactured by his company.

O. E. Schupp had charge of the exhibit of the Toledo Scale Company, Toledo, Ohio. He was assisted by a number of representatives from the various southern districts.

E. A. Terrell, president of the Terrell Machine Company, Inc., Charlotte, N. C., was present at the Terrell Company's exhibit practically the entire week, where his assistants were demonstrating the quill cleaning machine manufactured by his company.

J. S. Peete, district advertising manager for the southern states of the Burroughs Adding Machine Company, was a visitor at the Burroughs exhibit, which was in charge of Floyd Hughes, manager of the Greenville branch of the company.

Allen Deas, of Atlanta, Ga., the popular representative of the Crescent Waterproofing Company, of Chicago, and the Bestoprick Mfg. Co., of Cincinnati, was present to meet his friends.

J. S. Drake, superintendent of the Exposition Mills, Atlanta, Ga., and Frank G. North, Georgia and Alabama representative of Arnold, Hoffman & Co., drove through from Atlanta in Mr. Drake's car accompanied by Mrs. Drake and Mrs. North. This was one show where Frank wasn't arrested for speeding. He was, in fact, almost quiet.

Among the prominent northern men present at the show was R. C. Byler, advertising manager of the S. K. F. Industries, Inc., 165 Broadway, New York City.

(Continued on page 511.)

Georgia Manufacturers' Association Meets

The fourth annual convention of the Georgia Manufacturers' Association was held in Columbus on May 14th and 15th. There was an out-of-town attendance of about 50 members, and approximately 20 of the Columbus manufacturers were in constant attendance at the meeting. Hon. G. Gunby Jordan delivered the address of welcome, and made the visiting manufacturers feel perfectly at home. The address of welcome was responded to by W. J. Vereen, of Moultrie, who told the Columbus manufacturers many historical events of their city of which even they themselves were not informed, and accepted on behalf of the visiting delegates a cordial welcome. The keynote of the address of President Thomas K. Glenn was the lack of cooperation among the manufacturers of the state. He stated that the Georgia Manufacturers' Association should be composed of four times its present membership and that the good accomplished by the association entitled it to the support of every manufacturer in Georgia.

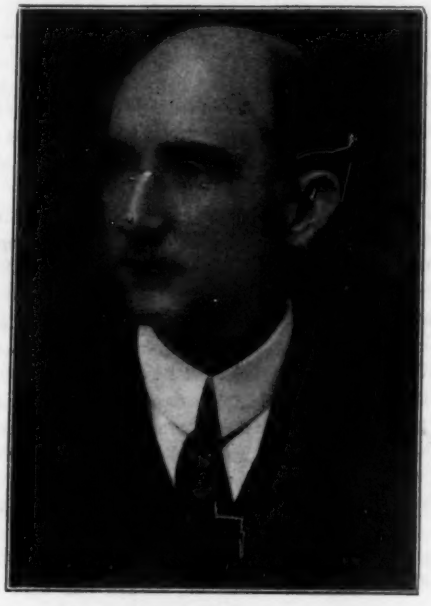
President's Glenn's address was in part as follows:

Whom do we represent and what right have you for existence? And it is in answering these very pertinent supposed inquiries that I propose to say just a few words.

"We have, as members of the Georgia Manufacturers' Association, at this time, the time of the fourth annual meeting, the names of 211 of the best and most representative industries of the state, and while the number is small compared to the total number in Georgia, yet it shows an increase of about 25 per cent over the previous year, and over 100 per cent over what we had three years ago. The increase in revenue is even more than 100 per cent as compared with three years ago, as will be shown by the report of your treasurer, which will be submitted in due course. Your secretary will also give you, in his report, a detailed account of the activities of the association, both of which papers I commend to your careful consideration, for they will convey to your minds impressions that I could not hope to make. I merely want to emphasize them, if it is possible to do so.

"By reason of my position with your association, I have had placed on me many obligations of a grave and varied service; this, I am sure, applies with equal force to your other officers. Some of this work I have had to decline, however much I should like to have responded to the call, while in other instances I have undertaken to do what I could. The following is one of the matters referred to:

"I do not see how the woeful lack of an organization both in number and effectiveness, could be more forcibly illustrated than to relate to you something of the history and work of Region No. 12, of the Resources and Conversion Section of the War Industries Board, of which your president was chairman. You are all, of course, familiar with the work of the War Industries Board. It was at the instance of, and under the directiton of that board that the Resources and Conversion Section was organized. The East and Middle West were congested with business, all ports north of Norfolk were embargoed, and yet the government was maknig demands for materials and supplies that could not be had. A detailed investigation by the War Industries Board developed the fact that in other parts of these United States there were plants and equipment sufficient to supply everything if it could only be made available. Then, too, many of these sections were sadly in need of work. This was especially true of the South and Southeast, where many industries were either wholly or partially idle, having little or no business, and their help being drawn to other sections of the country. At this point the War Industries Board said to every section of the country, which had been divided into regions, you must get your industries together, and let us know at the earliest possible time what, how much, when and at what price you can make or furnish the things needed. Really the price did not receive very much consideration. In some sections this work has been done by associations similar to ours, and these same sections were flooded with business. In others it took months to get organizations, for the undertaking, perfected and in running order. Every bit of the information wanted, so far as Georgia was concerned, should have been immediately available in the offices of your association, but sad to relate it was not.



THOMAS K. GLENN, RE-ELECTED PRESIDENT.

"In Region No. 12, composed of Georgia, North and South Carolina and Florida, many plants very reluctantly gave any informatiton, some even refused altogether, and others would not reply to letters or telegrams, while some gave freely. After some months of strenuous effort we were able to say to the government agencies what we were prepared to furnish, and did almost immediately get orders for plants that were practically idle and in sufficient quantities to keep them running for months. The organization had just gotten in good working order when the armistice was signed, and all war purchases were discontinued. If this organization had been perfected a year earlier, or if we had had in the offices of the Georgia Manufacturers' Association, or some other organization of similar character, the data and spirit of cooperation that is needed and necessary for any real constructive work in industrial expansion, this immediate section alone would have profited to the extent of many millions of dollars more than it did.

To have been able to take care of that situation alone would have more than compensated for all of the efforts necessary, or that had been put forth, in the upbuilding of our association.

"There are just as big opportunities ahead of us, in trade expansion, as we passed through during the years of 1915, 1916, 1917 and 1918 if the industries of the state will only coordinate their work and go after the business in an organized way. Will they do this, or will they wait for some other emergency to force them together? The closest kind of cooperation is necessary and it will have to be done in the end, so why wait? The federal government has already passed some enabling legislation, with respect to foreign business, and let us hope that this will be extended as necessity may arise. Our organization, more than any other, is in a position to carry the work forward, provided we have the proper support. If, therefore, both your membership list and cash receipts have shown consistent gains, and if through the efforts of your officers and directors the work of the association has been magnified both in your estimation and that of the public at large, and if the necessity for some great big organization of this kind has been clearly demonstrated, does it not seem reasonable that we have a right to live and expect a more hearty response than we have had from the 4,000 industries in the state? Instead of having $10,000 with which to do this work, we should have $100,000 or more each year.

"There is one other subject which I wish especially to bring to your attention in order that you may begin to think seriously about it, if you have not already done so. If this country wishes to escape the confusion and economic loss, which has characterized the people in some foreign countries during the past four years, we must begin at once to consider, in a real constructive and concrete way, the relations between the government, labor, and industry, and if possible approach some common ground on which these three agencies may work in harmony in order that the end which all desire may be reached. * * *"

"Anyone familiar with industries, of course, recognize that one cannot take a particular factory or industry and say to it, 'now and at once cooperate,' for cooperation is a thing of the spirit and must be worked out with careful adaptation to the time and the place and the conditions. What can be done in one place is impossible in another. What will succeed here will fail yonder, but the answer to the problems which are controlling as regards the relations of employer and employee is found in studying them from the standpoint of human fellowship, and the answer to the problems created by competition and combination is to be found in obtaining first the spirit of cooperation with the background of mutual understanding that implies and so to work it out as to produce the public good will outside of the shop, the value of which is well known to us as a business asset, and then to add to it that good will inside the shop concerning which the vision of many has hitherto been too short.

"Before closing I want to testify to the very efficient and untiring work which has been rendered to your association by your board of directors, your attorney, your secretary and your treasurer, and I personally want to thank them for the very great assistance that they have been to me. It has been a pleasure to have been associated with such men."

A very fine address was delivered by R. R. Otis, a member of the Employers' Industrial Commission of the United States Department of Labor, who has recently returned from Europe where a careful study of European labor and housing conditions was made.

At the afternoon session of the first day J. C. Adderly of Chicago delivered a very instructive address on "Social Insurance." This address was received with a great deal of interest by those present. One of the technical and most appreciated papers of the meeting was that by Robert Gregg, treasurer of the Atlantic Steel Company of Atlanta, who spoke on "Efficiency Principles in Manufacturing." This talk by Mr. Gregg was a sequel to a talk delivered by him to the manufacturers in Augusta last year.

Following Mr. Gregg, the Honorable Henry J. Fullbright, tax commissioner, outlined the "proposed State Taxation Plan." He was listened to with careful interest and answered many questions asked of him.

The Columbus manufacturers gave the visiting manufacturers a banquet in the main dining room of the Ralston Hotel that surpassed any banquet ever given in Columbus. The Honorable A. W. Cozart of Columbus acted as toastmaster, and kept those present convulsed with laughter at his witticisms. During the process of the dinner a quartette rendered many beautiful selections.

On the second day John Bell of the National City Company delivered a very interesting and instructive talk on "Federal Taxes." Mr. Bell volunteered to answer from his office in Atlanta all questions that were asked him.

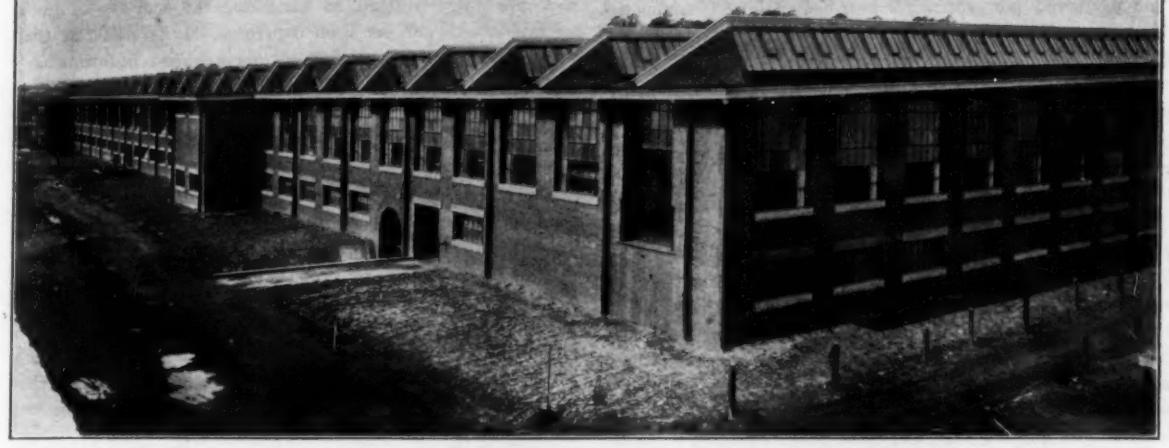
Another paper of great interest to the manufacturers was that on "Foreign Trade," by Manuel Gonzalez, chief of the Latin American Section of the Foreign Trade Department of the National Association of Manufacturers. In addition to his address Mr. Gonzalez distributed to those present a number of valuable bookets on foreign trade. To those interested in this subject this was the most valuable talk, perhaps, of the convention. It will be found in the Export Section of this number.

Lee M. Jordan, counsel for the association, made a report for the legisative committee and made a short talk on proposed and expected legislation. Resolutions were adopted requesting the return of the railroad, telephone, telegraph lines to their original owners under such constructive legislation as may be necessary, also resolutions requesting the government to lift all embargoes on articles manufactured, grown and produced in the United States.

Resolutions were also adopted on good roads and the work of the Commissioner for Feeble Minded, and just before adjournment resolutions thanking the officers of the association, the attorney, the manufacturers, the good people of Columbus and the president were adopted.

Thomas K. Glenn was re-elected president; W. J. Pierpont of Savannah and W. J. Vereen of Moultrie were re-elected vice-presidents and A. D. Schofield of Macon was elected vice president. H. E. Watkins was re-elected treasurer, and Edward A. Kimball re-elected secretary. The following directors were elected to succeed the terms of five directors expiring this year that are as follows: R. D. Cole of Newnan, J. H. Diamon of Columbus, Harvey Stovall of Athens, W. H. McKenzie of Montezuma and J. Russell Porter of Atlanta. The following directors were re-elected: W. B. Baker of Atlanta, M. E. Dyess of Augusta, H. P. Salmon of Chattahoochee and H. E. Watkins of Atlanta.

What the Southern Mills are doing



ONE CORNER OF THE BIG NEW WEAVE SHED AT THE LANETT COTTON MILLS, LANETT, ALA.

An informal meeting of cotton mill owners of Texas was held in May. Prospects as to cotton and the cotton goods market and problems arising from this were discussed by the members of the conference. J. C. Saunders, of Bonham, who presided at the meeting, regarding the purpose of the session, said:

"We are optimistic about the prices of cotton and cotton goods. We believe that fair prices will be paid this season. The market has already shown considerable strength and we believe it will advance more. However, we are in conference here to take care of any emergency which may arise if this does not happen. General problems surrounding the cotton mills of Texas were considered by the cotton mill men.

Material improvement in the demand of textile products of all kinds within the past few weeks has been noted by cotton manufacturers in the Charlotte territory, according to information obtained from leading men of the industry. While the demand has not yet approached normal, the fact that some good orders are being placed with the mills are accepted as a most encouraging indication.

The improvement has already resulted in the most important chain of mills in Gaston county, the Armstrong group, including about 10 plants, resuming full time operation. This group was previously working about half time, four days and three nights. A number of scattered mills in this county, which have been curtailing production, have increased their daily operating time.

Conditions affecting the knitting industry have shown at least as much improvement as in the weaving industry. During the past week a relatively large number of the knitting mills which have been idle, have resumed curtailed operation and others that had curtailed only have resumed full time work.

In addition to the inflow of orders the number is increasing with a rapidity that is accepted by the industry as a strong indication of an early and more marked improvement in general conditions. It was explained that at best the orders now being placed show the jobbers have reduced their stocks below the minimum, but their apparent policy of buying is to order only in sufficient quantity to meet immediate needs, with the view of quickly making the turnover and realizing profits. Such a policy should be accepted as an indication that the jobbers consider the market still "unhealthy," from their viewpoint, it was pointed out.

Announcement is made of the transfer of the ownership of the Loray Mills, Inc., Gastonia, N. C., to the Jenckes Spinning Company, of Pawtucket, R. I. Messrs. F. S. Jenckes and I. B. Merriman own the controlling interest in the Jenckes Spinning Company. It is estimated that the worth of the Loray Mill is something like two and a quarter million of dollars. No announcement has been made of the price paid in the recent transfer. Stuart W. Cramer, of Charlotte, is president of the mill and W. D. Anderson, of Gastonia, is treasurer. It was erected in 1901 by John F. Love, now of Charlotte, and the late Geo. A. Gray, of Gastonia. It manufactures sheets, drills and print cloths. The Jenckes Spinning Co., the new purchasers, are said to be one of the most firmly established textile firms in New England, with unlimited capital behind them.

The new community house in the village of the American Spinning Company, Greenville, S. C., will be the latest word in the arrangements of buildings of this nature. In the building will be a modern gymnasium, library, domestic science rooms, club rooms and shower and tub baths for boys and girls and every convenience that will make the building attractive to the people of the village. The plans call for the beautifying of the grounds surrounding the community building which will have entrances on three streets.

The Victoria Cotton Mill of Rock Hill made application for an amendment to its charter so as to allow an increase in its capital stock from $350,000 to $400,000.

An item under date of May 14th that is of especial interest to mill men is the affirmation by the Supreme Court of Georgia of the permanent injunction of Judge Pendleton in the case of the Exposition Cotton Mill vs. Callan et al. Callan, it will be remembered, tried to conduct meetings

among the employees of these mills in an effort to organize a union local and was checked in his work of disturbance by the court injunction already referred to and which has now been upheld by the Supreme Court.

The Ruby Cotton Mills, Inc., Gastonia, N. C. has been announced, authorized capital, $300,000; $100,000 eight per cent preferred non voting; subscribed, $100,000 common; duration, unlimited. G. R. Spencer, W. H. Adams, J. M. Holland, all of Gastonia, incorporators.

Another new mill for Gastonia is the announcement of the Dixon Mills, Inc., with an authorized capital of $400,000; $150,000 preferred; subscribed, $71,000 common; duration, unlimited. A. M. Dixon, J. K. Dixon, W. L. Balthis, all of Gastonia, and others, incorporators.

Preliminary work incident to the rebuilding of the Laurens (S. C.) Cotton Mills village is making good progress. Thirty cottages have been dismantled and material for the new houses is being made up. A topographical survey of the village is being made by the landscape engineer who has been employed by the company to lay out the streets anew, locate the cottage sites and in general make up a new town. The exact type of house for operatives has not been determined but they will most probably be of the bungalow order. They will be larger than the present cottages; will be fitted out with electric lights and waterworks. In fact it is proposed to make the Laurens mill village more attractive and provide the help with some of the modern conveniences. The Fiske-Carter Construction Co., of Worcester, Mass., and Greenville, S. C., has the contract.

The Orr Cotton Mills, of Anderson, S. C., have three new Saco-Lowell Creighton openers installed and work is now progressing on a cotton conveying system of the same make so the cotton will not have to be touched in its progress through the pickers. A new brick chimney is being erected for the stand-by plant of these mills.

Announcement was made recently that Col. C. B. Armstrong and his associates now operating the Armstrong chain of mills, with headquarters in Gastonia, will at an early date organize and build a new yarn mill, with 12,000 to 15,000 spindles and a capital stock of $400,000. The new enterprise will be devoted entirely to the manufacture of fine combed yarns, No. 100. As yet no name has been decided upon, nor has any definite decision been made as to the location of the mill. A charter will be applied for and in the near future the organization will be completed and actual work on the new enterprise will be begun.

The Hohmann-Nelson Company, making automatic controlling systems for temperature, pressure, time and levels and located at Eau Claire, Wis., is a new company which intends to serve the textile industry as manufacturers, engineers and contractors in the complete equipment of mills, dye houses, etc., with such instruments and devices as it will make.

A. B. Hohmann, the president, is known the world over as the inventor of the thermometer that bears his name and so universally used in the textile industry. He is also a pioneer in the introduction of controlling systems for industrial processes. He was formerly associated with the C. J. Tagliabue Mfg. Co., of Brooklyn, N. Y.

A. J. Nelson, the vice-president and secretary, was associated with the Taylor Instrument Co., of Rochester, N. Y. Edward Hutchens is treasurer.

The New England Mill Situation.

The pessimism that saturated New England mill circles three months ago has disappeared. The mills are steadily resuming operations and some of them have booked as large orders as they can turn out in the next four months. There is a new wage problem at hand and the scarcity of good operatives has not yet been overcome. It is still felt that the industry has many difficult days ahead before after-war reconstruction may fairly be regarded as satisfactory, nevertheless, it is conceded that many fears were unwarranted and that the expected great losses have not materialized.

As a consequence of the violent cotton agitation of this year there has come about a better understanding of the planter's problem in cotton growing. It will seem strange to say this in view of some of the bitterness shown in public correspondence and newspaper comments, yet those who are in closest touch with the buyer and seller of cotton agree that it is incumbent upon the manufacturer of cotton cloth to offer larger inducements to the planter in this country, if the supremacy of strictly American cotton interests is to be maintained and expanded.

The project of establishing cotton warehouses in the South, at the seaports, and in the cotton manufacturing centers has been finally launched. It is easy to attach too large hopes to what appears to be a lusty infant. The parentage has at least brought in new blood, inasmuch as several large interests that were prone to look abroad for American cotton markets are now determined to make better use of the markets at home by supplying the cotton mills here with better grades of cotton, and with cotton more uniformly packed, and more safely stabilized in value for the common interest of the grower and the manufacturer. By enlisting the aid of banking capital located in the United States a decided advance has been made toward eliminating the vicious spectulative element that has fattened and prospered at the expense of the mill and the farmer.

The wage problem now confronting New England has some aspects of an international character. There are three or four different elements at work to control the operative within unions or associations of different kinds. The American Federation of Labor is one. The local unionism which in New England has been the outgrowth of English trade-unionism is another. The I. W. W., with all the radical elements of the country is a third, and there has now appeared on the horizon an organization that is operating back to the mill districts from the garment working districts of the West.

Where New England manufacturers can bring themselves to deal with unions at all, they prefer to deal with the strictly local union. But this sort of an organization is weak in many respects, and with the internationalization of unionism at hand, the time has come when the manufacturer must choose what element he shall foster in order to save most from the changing conditions that seem to be at hand. The hatred of New England for the socialistic element in labor is pronounced and it is using every possible force in combatting the I. W. W. But there are other sections of the country where this element is strong and where it has been recognized as a means of dealing with textile operatives.

In New Bedford and Fall River, the conservative forces

have been able to operate in some degree with the element of the American Federation of Labor that is most influenced by the systems in use among the English unions, but the greatest stress is laid upon the influence of the local unions, whose funds are invested in local real estate and whose collectors work regularly among the operatives. There has been nothing quite like the welfare work of some southern mill communities seen in the large tetxile centers of New England. The New England communities are more diversified in occupations, being larger and older, yet there are some manufacturers who feel that some elements of southern welfare work could be transplanted North and made to bear good fruit.

The immediate demand made in New Bedford and Fall River is for an advance of 15 per cent in wages. On February 3 a 48-hour week was demanded and has been quite generally conceded. There are some mills that are running along under 54-hour schedules outside of the larger centers. The wages were not reduced when the 48-hour week was granted, nor were they advanced to a basis that would permit the operative to earn as much in 48 hours as he earned in 54. Since the voluntary granting of the 48-hour week to the union demand, the state legislature of Massachusetts has enacted a 48-hour law to become effective July 1. There has been some disposition to fight it by asking a referendum vote, but this is expected to amount to little.

If the 54-hour wage basis is to be restored for 48-hours work the advance of 15 per cent will be too large. Some attempts at compromising by granting 54 hours pay for 48 hours work have been talked of. At this time the manufacturers are trying to deal with the officers of the various unions and it is the desire of the more conservative men to avoid a strike at this time. Thus far the markets have been able to absorb goods at the very high costs entailed by the frequent war advances and just now the market conditions seem to foreshadow a further ability in taking up the added costs. The unions have asked for an answer to their requests in time to have the new schedules go into effect June 2 and at this time it cannot be forecast safely what that answer will be.

There are still some unsettled controversies in the wage field, notably at Lawrence, where a prolonged strike has now petered out to a point where only the Everett mills are affected to the extent of being closed down completely. It is expected that they will resume before a great while. The trouble in Maine mills following the 48-hour demand has been adjusted by a resumption of work pending the time when mills will have orders in hand sufficient to warrant them in running full time.

The mills in this section that have been built in the past few years to produce special fabrics or yarns for the automobile trade have been very busy and now have large orders ahead. They comprise mills making tire yarns, tire fabrics of many kinds and some wide goods for upholstery purposes.

The gingham mills have been able to work out of a difficult position through the very active demand for these cloths, stimulated in part by national gingham week in retail stores. The York and Everett mills had been closed for a long time, and the Amoskeag Company operated on a 35-hour week schedule for some time. In this way goods did not accumulate. The long delays on the part of jobbers in placing orders for fall ginghams did not bring about a surplus of merchandise in first hands so that when the time arrived last month to make prices on fall ginghams, the prices made in January were maintained. In fact they were slightly increased in order to allow a higher list price and a longer discount to the jobbers. Utility ginghams were priced at 20 cents in January and 21 cents for fall, while A F C goods were priced at 23 cents instead of 22 cents.

The mills making flannels and blankets have secured as large orders as they can take care of until October and they recently announced the withdrawal of goods from sale. Tickings have been sold for some time on a basis of 27 cents for 8-ounce goods and they were recently sold up and withdrawn. A month ago the percale situation was much mixed owing to a break in western jobbing circles. That situation has been cleared up and recently an advance of 1 cent a yard was made with another now pending. Narrow shirting prints that had been selling at 10¼ cents have been advanced to 11 cents. Narrow prints have been sold more freely to the jobbing trade and for export than has been the case for two or three years and the Algonquin and American works are very busy with all machines in operation. The Pacific Works, where they have not been interfered with by strikes at Lawrence, are also very busy again.

The gray goods markets have been very strong. During April the sales were the largest made since the early war demands jumped prices so high a year ago. The print cloth sales at Fall River substantially exceeded the output. There has been a very large business done on sateens, and lining specialties, stimulated in the activity in the clothing and cutting trades. The recovery of business in the fine combed yarn goods mills has been very striking and has reached the point where mills are selecting their customers and the work they care to undertake.

The demand for fancy weaves has been large but mills have been slow in meeting it because of the restrictive labor conditions affecting production. The shirtings booked for future production have been the highest priced lines ever known in the trade, while the volume has far exceeded anything previously booked in the history of the mills. There has been a strong demand for silk and cotton goods for four weeks past and it has become almost impossible for converters to find looms on which two-end canton work may be done.

The finishers have been resuming operations steadily and some large units are now 70 per cent occupied, compared with 40 and 50 per cent a month or six weeks ago. A great many cloths are being rushed in to be finished and some concerns are beginning to pile up with spring work.

The bleacheries are busier than at any time since last November. Some of the low count goods have been sold in huge quantities for home and foreign shipment. These goods were reduced in price early and they were bought up promptly by a few large operators.

The machine shops are not disposed to seek new business at price concessions and are slowly revising their costs through the selection of the steadier and more skilled operatives released from war work. There is plenty to do but the matter of price and the pliability of labor are factors of consequence affecting the immediate future of the output.

Cotton Comment.

BY H. AND B. BEER.

New Orleans, May 10th, 1919.

A further substantial advance in the value of cotton was established the past month, and the tendency of the market continues upward under the stimulating influence of improvement in the demand for cotton goods, raw cotton and prospects for early peace.

There is a distinct improvement in the demand for cotton goods of all descriptions for home and foreign account, with the outlook encouraging for a further expansion of business.

Like conditions prevail in the Southern spots markets which are ruling very steady at the advance and tending higher So far the demand has come principally from Liverpool, but it is likely to become more general in the future.

Arrangements for the sale of cotton to the new republic of Czech-Sloyakia (formerly a part of Austria) have been perfected, which is another step forward for the expansion of foreign commerce with heretofore enemy peoples.

By reason of indications for early peace and because of the urgent need of cotton abroad, there is a marked improvement in exports to Europe, now 4,176,000 bales vs. 3,538,000 last year, or 638,000 larger than to even date last year, with prospects for heavy shipments during the remainder of the season.

As yet, however, American spinners have been buying only sparingly of spots in the South, thinking prices would decline. Meanwhile the market has been advancing, and domestic mill stocks, which were 250,000 less than one year ago at the close of March, are undoubtedly very much smaller today, as American spinners' takings during April were 266,000 bales less than for the corresponding month last year.

As a result American mills, North and South, find their stocks of raw cotton diminishing fast at a time when the demand for cloths and yarns is improving, and Liverpool buying freely in anticipation of an early opening to trade of the important consuming markets of Central Europe, which have been closed for nearly five years.

The fact that the Allies have already presented the peace terms to Germany to observe, the signing of which will likely occur before the expiration of the current month, makes early peace almost a certainty, as Germany must sign or starve.

Aside of the probability of Germany accepting the terms as drafted, the increase in tonnage for commercial purposes is more in evidence every day, with indications of increasing in the future more rapidly as we enter the last half of the year.

There is said to be an immense amount of cotton held in the interior and at the ports for shipment to foreign countries, and as the number of ships are increasing for that purpose, reserves in the South are likely to decrease rapidly from now on.

These possible developments are apt to make for a stronger position so far as the holder of spot cotton in the South is concerned, and should all the bullish expectations develop in the goods markets and in exports, American spinners would probably find keen competition for the unsold stocks in the interior, especially if the blockade against Germany and Austria is lifted soon.

Concerning prospects for the new crop will say that planting is nearing completion. The recent general rains and higher temperatures have been productive of satisfactory stands, but owing to the reduction in acreage, now privately estimated at about 12 to 15 per cent, not more than a moderate crop can be reasonably hoped for, even if good weather prevails.

In event of unfavorable weather or serious damage by weevils, not to mention the possibility of damage by frosts next fall, there is danger of another short crop this year, something that domestic spinners should guard against by beginning to buy for their future requirements, because if anything serious should happen to the new crop when the whole world is open to trade again, much excitement may be witnessed in the market.

Lancashire Notes.

BY AN ENGLISH CORRESPONDENT.

The cotton trade here is in the middle of a short-time stoppage. From April 10th to 28th the Master Spinners' Federation and the Cotton Spinners' and Manufacturers' Association have recommended all their members spinning American yarn—except those members of the latter organization who spin it for use in their own weaving sheds—to close down. This makes a cessation of production for fourteen working days. The stoppage had for weeks before been seen to be inevitable, failing a sudden change in the commercial outlook and the removal of the export restrictions which the trade has so far agitated in vain.

Unlike any previous short-time stoppage, this one was come to after consultation with the leaders of the operatives. The employers have never before taken them into council on such a question and the circular sent round to all firms urging them to carry out loyally the resolutions and bearing the signatures of both employers and trade union leaders was an unique document. Firms have been especially urged to insure that uniform action is taken and no pleas of equivalent short-time working, either before or after the period decided upon, have been entertained.

"In forwarding you the terms of the above resolution," says the joint circular, "we wish to point out that it is only a preliminary measure, which will be followed later by other recommendations of the joint committee. We feel sure that no words of ours are needed to impress upon both employers and workpeople the absolute necessity for this step. It is common knowledge that individual mills are closing down in all districts for varying periods and we cannot too strongly point out that such irregular stoppages, while not calculated to be so speedy in their effect as a combined uniform stoppage, are distinctly unfair to the workpeople and do not distribute the burden evenly."

The joint committee "confidently claim for the present recommendation the loyal support of all American cotton using firms and workpeople employed by such firms, in order to prevent a disaster to the trade as a whole. It is hoped that no single firm or body of workpeople will place their present individual necessities against those of the trade as a whole. The joint committee feel that in their endeavors to deal with the requirements of the case they must be wholeheartedly supported as the position is

becoming more acute every day and immediate united action is needed."

It is possible that there will be trouble over the question of hours. Many weeks ago the operatives applied to the employers for a reduction of the new working week from 55½ hours to 44, such reduction to be accompanied by an increase in wage rates which would enable the employees to earn as much in 44 hours as they now earn in 55½. Several conferences were held and the employers eventually offered a week of 49½ hours without any increase in wages. The employers suggested an arrangement which would mean one hour less for every working day, and their whole offer was dependent upon an agreement being come to under which some mutually agreed upon rearranged system of working should be put into operation with a view to seeing what percentage, if any, of the reduced output could be recovered and the maximum product be obtained from the machines. This proposal the operatives have rejected. They have instructed their representatives to continue to press their claims by negotiation, if the employers are willing, but in the meantime a ballot is to be taken on the question of whether the operatives favor a strike in order to attempt to enforce their demands. It is predicted that the ballot will show a majority for a strike and that the employers will improve upon their present offer. A 49½ hours week will not be very attractive from the point of view of recruiting labor, when the contiguous industries of mining and engineering are working under 40 and 47 hours respectively, and are certain to have these hours still further reduced in the very near future.

As to the trade prospects ultimately, if we may accept the view of Sir Charles Macara, who unquestionably is as competent an observer as anyone, the war is not at all likely to damage the Lancashire trade relatively to that of her competitors. In an article in this week's Textile Record he says: "During the ten years before the war our spindles were increased by 12,000,000, an increase in excess of the total number of spindles possessed by India, China and Japan collectively and also in excess of the total number of spindles in Germany, Russia or France. . . . . Unless there is inexperienced or obstructive legislation, or want of friendly cooperation between the organizations of capital and labor this immense advantage at a time when the markets of the world are depleted of cotton goods assures full employment for Lancashire's staple industry."

Sir Charles also argues how the position regarding textile machinery also favors Lancashire as against competitors. "During the war," he points out, "the works of the textile machinery makers were largely turned to the manufacture of munitions and it will take a considerable period before they can get back fully to their ordinary industry. The first work, when they do get back, will no doubt be to restore the machinery of our Allies destroyed or damaged in the war. Merely to replace destroyed or worn-out machinery throughout the world will take a long time, during which the cotton industry in this country will have an opportunity of increasing its output to possibly what it was in the year preceding the war. Moreover, since the outbreak of the war the cost of cotton machinery has increased by something like 250 per cent, a formidable handicap to new undertakings in countries which might wish to enter into competition with England."

Since the last letter discounts on yarn have been abolished. The decision of the Master Spinners Federation to take this course was resented by the Cotton Spinners' and Manufacturers' Association, which covers mainly the weaving section, from which intimation has been sent to the master spinners that the manufacturers do not intend to purchase yarn except upon the hitherto customary discount terms. The "rub" with the manufacturers is that they still have to allow discount on cloth purchases, though it is reported that an offer of the spinners to join with them in an effort to get cloth discounts abolished was declined. In this matter, the manufacturers are not, of course, in so favorable a position as the spinners, whose business is mainly in the home market. The Spinners Federation points out that it is now a number of years since spinners ceased to be allowed discount on raw cotton and also on other articles which are necessary for the carrying on of their trade. They also claim that the disappearance of discount would not affect the price of yarn but would merely save the trouble of adding to yarn quotations a sum which is taken off when payment was made.

Southern Concern Shows Rapid Growth.

Within the past two years the increase in the textile industry in the southern states has been most remarkable. This has quite naturally resulted in the growth of machinery manufacturers who foresaw this increase and located in the South.

The Terrell Machine Company of Charlotte, N. C., was formed early in 1917, and since that time has devoted practically its entire output to the production of feeler bobbin cleaning machines. The present type of these is well known under the trade name of "Utsman," there being now more than one hundred of them in operation in some of the largest mills in the South. They are manufactured in two types—a single-end and a double-end. The latter type has twice the capacity of the former.

The company also builds and designs machinery for different purposes, either on contract or on a time and material basis.

The president and treasurer, E. A. Terrell, is the son of the late T. V. Terrell who was at one time manager of the Erwin Cotton Mills Co., at Cooleemee, N. C., and later manager of the Locke Cotton Mills Co., of Concord, N. C. During the war E. A. Terrell served as second lieutenant in the chemical warfare service in France and the business was run by Mrs. E. A. Terrell until January, 1919. The vice-president and secretary is E. S. Smart, superintendent of the Locke Cotton Mills Co., Concord, N. C.

The company now has a capacity of about one hundred and fifty "Utsman" quill cleaning machines per year in addition to the contract work which they are doing. They are represented in the southern states by J. M. Williams who was associated, until quite recently, with The Southern Textile Bulletin.

Since entering the dyestuff field, the Grasselli Chemical Company has found that branch of their business expanding to such an extent that it has decided to handle it separately from the chemicals, so far as possible, and with that in view are opening an office in the Commercial National Bank Building at Charlotte, N. C., for the dyestuff department which will handle the dyestuff business for the entire South. Stocks will be carried at Charlotte and at Birmingham, Ala.

COTTON MANUFACTURING.

Influence of Temperature in the Slashing of Cotton Warps.*

BY PROF. EVERETT H. HINCKLEY.

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Although the results obtained at the Naumkeag Steam Cotton Co. indicated with considerable directness that temperatures much below that of boiling water are desirable in the size box, it was thought best to test the accuracy of this conclusion by carrying out another series of tests on different yarns at a different mill, and under entirely different operating conditions. For this purpose, the New Bedford Cotton Mills Corporation kindly offered the use of their plant. In general, the plan of work was the same as at the Naumkeag Steam Cotton Co. Several warps were slashed under varied, but controlled, temperature conditions, and the degree of success attained judged by the results obtained in the weaving. Finer yarns and a much

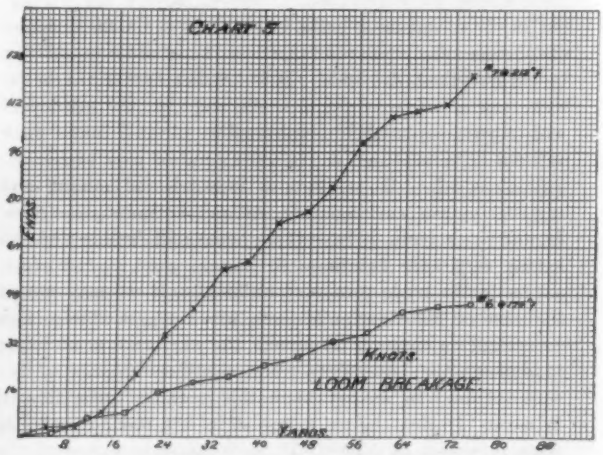
denser warp were used, and the looms run faster. The slashing was done on Saco-Lowell slashers. All the warps were run on one machine. None of the usual conditions of operation at this mill were altered but that of temperature.

Details of slashing: Average speed of machine 25.7 yards per minute. 12 slasher beams of 35's single yarn, 482 ends each, were made up into 10 loom beams. 9.7 average number cuts per loom beam.

The sizing mixture was carefully made to insure uniform quantities of material from "vegetable starch," a gum, and a softener. Each mixing was properly boiled, then run into a supply tank from which all the slashers drew their supply. The slasher had two inlet valves for size, one at each end of the size box. These valves were linked together by a steel rod so that both valves opened at the same time. The top squeeze rolls were carefully lapped with a high grade of slasher cloth. The steam pressure in the drying cylinder was kept nearly constant, averaging 12.8 pounds. Each warp was completely dried.

Details of weaving test: 50-inch Crompton & Knowles looms—3 x 3; 156 sley—6 harness plain; 4 ends in a dent; 26 picks of number 10 filling yarn; 36 inches wide in the cloth.

Looms ran 159 picks per minute. A special reciprocating rod was used to open the yarn back of the regular



ENDS BROKEN DUE TO KNOTS; WARPS SLASHED AT NEW BEDFORD COTTON MILLS CORPORATION.

lease rods. Owing to the density of the warp and consequent high breakage of yarn, only one warp could be put in a weaver's set at a time, so the two warps number 6 and number 7 used for comparison were run successively on the same loom. Humidity conditions were fairly constant so that no appreciable variation entered the results by weaving the warps successively. Further confirmation of the results was made by running another warp, number 8, in another set of looms but near the first set. An observer took accurate note of all ends broken out either at the back of the loom or in the shed and classified under causes as "knots," "bunches," coarse threads" and "unknown." (A photograph of the first three classes of faults is shown.) This last class comprised ends broken in the shed for which the cause was not readily apparent. Some of the probable causes for these ends breaking are "thin threads," "slack ends," "rough harness eyes," and "tight ends."

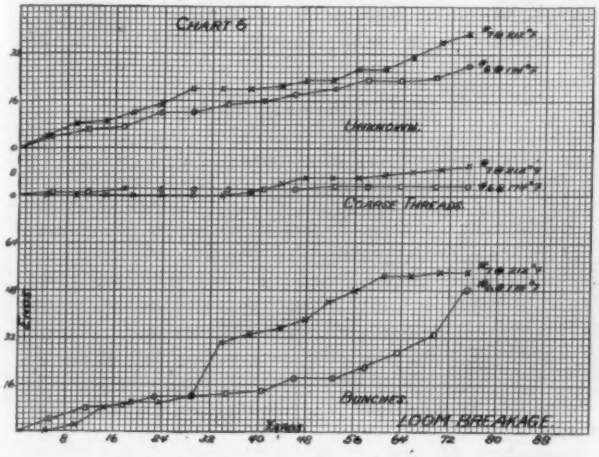
Two warps, one slashed at 212 degrees F., warp number 7, the other at 174 degrees F., warp number 6, were woven on the same loom by the same weaver. The results obtained over equal yardage of woven cloth are given in Table 4.

TABLE 4.
Loom Breakage Warps Slashed at Different Temperature.

Warp	Temperature of sizing	Knots	Bunches	Coarse Threads	Unknown	Total
6	174° F.	45	48	3	28	124
7	212° F.	122	54	10	39	225

*This article is the result of original investigations conducted by the author, head of the Department of Chemistry and Dyeing at the New Bedford Textile School. It is the third article of a series by the same author.

These same results are shown in detail by charts number 5 and number 6. Comparison of the figures given show at once the marked superiority of the warp sized at 174 degrees F. The breakage due to knots of the warp sized at 174 degrees F. is less than half that of the warp sized at 212 degrees F. The breakage due to bunches is slightly less, but as this fault is accidental no great stress can be laid on this point. The breakage due to "unknown causes" is nearly one-third less, and that due to coarse threads cover two-thirds less than that of the warp sized at 212 degrees F. Faults due to coarse threads should be made to weave better by the sizing, as should also those due to "unknown causes"; therefore, the results obtained must be considered at their face value. The totals show an advantage of 44.9



ENDS BROKEN DUE TO BUNCHES, COARSE THREADS AND UNKNOWN CAUSES; WARPS SLASHED AT NEW BEDFORD COTTON MILLS CORPORATION.

per cent for the warp sized at the lower temperature. A comparison of the charts will show that this advantage was held throughout the test. That is, these results show no evidences of being accidental, but do indicate the true conditions. Hence, better weaving is to be expected from a warp sized at lower temperature.

In order to check the foregoing conclusion, another warp sized according to the usual method of the mill on the same machine at a controlled temperature of 209 degrees F. was woven in another set of looms. The weaver selected was one of the best in the room and the test run over a much longer period of time. In Table 5 are given the results obtained. Using the same units as for charts 5 and 6, chart 7 was laid out showing the details of this test.

TABLE 5.
Loom Breakage Warp Slashed in the Usual Manner.

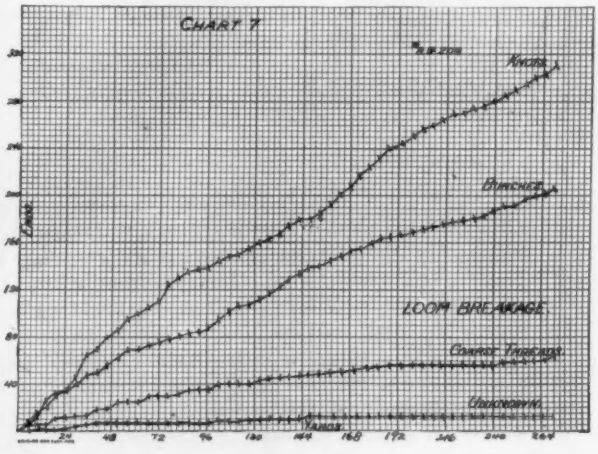
Warp	Knots	Bunches	Coarse Threads	Unknown	Total
8	309	205	63	13	590

Examination of these results show that the effect on temperature is very regular and the defective ends are invariably proportional to it. In order to better study the results Table 6 was prepared, showing the ends broken per linear yard woven. Chart 8 gives the graphical comparison of these values:

TABLE 6.
Ends Broken per Linear Yard of Cloth Woven.
(New Bedford Cotton Mills Corp.)

Warp	Temperature	Knots	Bunches	Coarse	Unknown	Total
8	174° F.	.600	.640	.040	374	1.654
7	212° F.	1.627	.720	.133	.520	3.000
8	209° F.	1.141	.759	.223	.048	2.181

So evident did this temperature-breakage proportional relation appear that the results obtained at the Naumkeag Steam Cotton Co. were calculated in the same manner for comparison and are given in Table 7. In this case three different controlled temperatures give a better opportunity



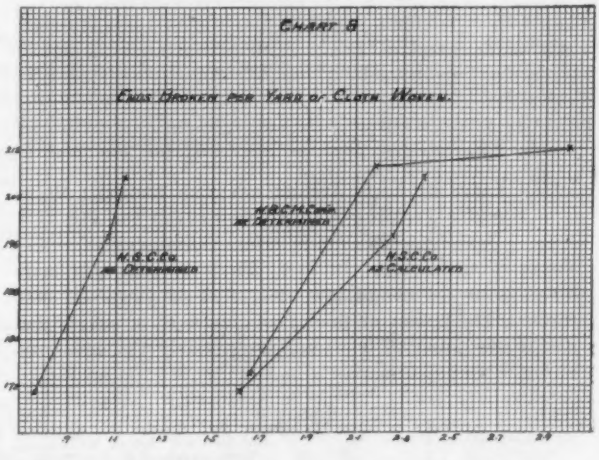
ENDS BROKEN DUE TO KNOTS, BUNCHES, COARSE THREADS AND UNKNOWN CAUSES; WARP SLASHED AT NEW BEDFORD COTTON MILLS CORPORATION.

to develop the curve. The interesting confirmatory conclusion is reached that lowering temperature increases the weaving qualities of the yarns.

TABLE 7.
Ends Broken per Linear Yard of Cloth Woven.
(Naumkeag Steam Cotton Co.)

Warp	Temperature	Total
1	171° F.	.767
2	197° F.	1.070
3	207° F.	1.130

It will be noted that there is considerable higher breakage per yard in results obtained at the New Bedford Cotton Mills Corporation. This is due to a variety of causes. The most important of these are the greater speed of the loom, the higher numbers of the yarn, the width of the



TOTAL ENDS BROKEN PER YARD OF CLOTH; WARP SLASHED AT NAUMKEAG STEAM COTTON CO. AND NEW BEDFORD COTTON MILLS CORPORATION.

cloth, and the density of warp in the goods woven at that mill. Without trying to deduce any hard and fast rule, if we assume that the breakage of yarn is directly propor-

tional to the density of the warp, the numbers of the yarn, the speed of the loom, and to the width of the cloth, we obtain a factor by use of which the instructive comparative figures shown in Table 6 were calculated. Calculation of factor:

$$\frac{156}{68} \times \frac{150}{104} \times \frac{35}{22} \times \frac{36}{90} = 2.11$$

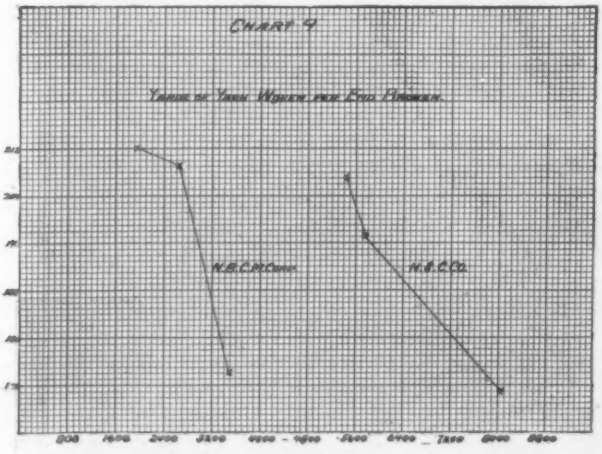
TABLE 8.

Calculated Breakage per Yard on New Bedford Mills Corporation basis.

Warp	As Determined	As Calculated
1	.767	1.612
2	1.070	2.258
3	1.130	2.384

These values along with the corresponding ones for the warps number 6 and number 7 are shown in graphical form in Chart 9. The curve for the fine warp is just reverse in form of that for the coarse warp. This is due partly to the kind of starch and the nature of sizing compound used. But since each sizing mixture used represents the usual practice for mills running on these classes of goods, the results are of direct practical importance and can be applied without change to concrete problems in sizing. These curves show in striking manner the value of lower temperatures in the size box. They also show that the finer and denser the warp the greater the necessity for this regulation.

As a check on the "calculated" per yard basis of comparison the results obtained in the weaving tests were calculated on a basis of the actual number of yards of yarn



TOTAL YARDS OF YARN WOVEN PER END BROKEN; WARP SLASHED AT NAUMKEAG STEAM COTTON CO. AND NEW BEDFORD COTTON MILLS CORPORATION.

woven in each warp. In fact, this is a better and more direct basis for comparison than that of yards of cloth woven. The results of this calculation were of course similar to the previous ones, indicatng clearly the advantage of lower temperature.

TABLE 9.

Yards of Yarn Woven per End Broken.

Naumkeag Steam Cotton Co. Temperature ° F.	Yards	New Bedford Cotton Mills Co. Temperature ° F.	Yards
171	8041	174	3505
197	5764	207	2652
207	5458	212	1928

Throughout these tests the results point steadily to the fact that the lower the temperature that the size is applied within the limits tested (171 degrees to 212 degrees F) the better the results obtained in weaving. The application of this knowledge is not difficult. But when applying, account should be taken of the fact that each size maker has his own formula. Those frequently vary greatly. If the formula gives a very thick mixing the temperature of the size will have to be kept up to prevent the squeeze rolls from slipping and consequent stopping of the cloth covers of the top roll. Such a thick mixing may be necessary, although it adds to the difficulty in drying, to meet particular conditions. However, such conditions obtain in practice and they must be recognized and reckoned with. With these things in mind, it is recommended that a temperature as near 170 degrees F. be maintained in the size box as is possible and not run into these difficulties. In the case of slashing warps similar to 1, 2 and 3, I would advise running them at 170 degrees F. For the finer grosgrain warp I would advise on account of the difficulties mentioned 185 degrees F as the proper temperature.

Notes on Cotton Spinning.

BY W. W. COBB.†

I shall not attempt to go into all the details pertaining to spinning. The most important factor in obtaining the best results in spinning is the careful selection of the cotton staple. There was a time when there was little or no attention paid to the grade and staple of the stock, regardless of the number to be spun. But we have learned that won't do, and if we expect to get the good strong yarn we are looking for, we must take into consideration the counts to be spun.

Another essential is a well equipped and a well cared-for card room in which to work this cotton so that it may be delivered to the spinning room in the form of good roving.

Now, regarding the spinning proper, and assuming that the right kind of care has been taken of the selection of the stock for the numbers to be spun, and that proper care was taken of it before it reached the spinning room, there are a number of things in the spinning room that will damage the yarn after it reaches there. One of these is the lack of cleaning and oiling. We all know, or should know, that there are parts of a machine that it does no good to oil unless it is first cleaned. Not only that, but all machinery runs better and lasts longer if it is properly cleaned and cared for.

In the last few years most of us have been so busy striving to keep things going that we have not looked after the details as we should and as a result our system has gone down and carried with it everything in the way of good results.

Sometimes the draft is not properly looked after and this will cause the spinning to run badly, and the yarn spun under these conditions will be poor. I think that if it is necessary to run a little longer draft, it is better to run it in the spinning room than in the card room; butI do not think it wise to run a long draft in either if we can avoid it. I have known mills where they were over-drafted in both places, thereby causing the card room to have to stop off for about one day a week; and some still claim that they cannot shorten the draft. This is very unwise and

*Read before the Sothern Textile Association at Greenville, S. C.
†Overseer of Spinning at the Monarch Mills, Union, S. C.

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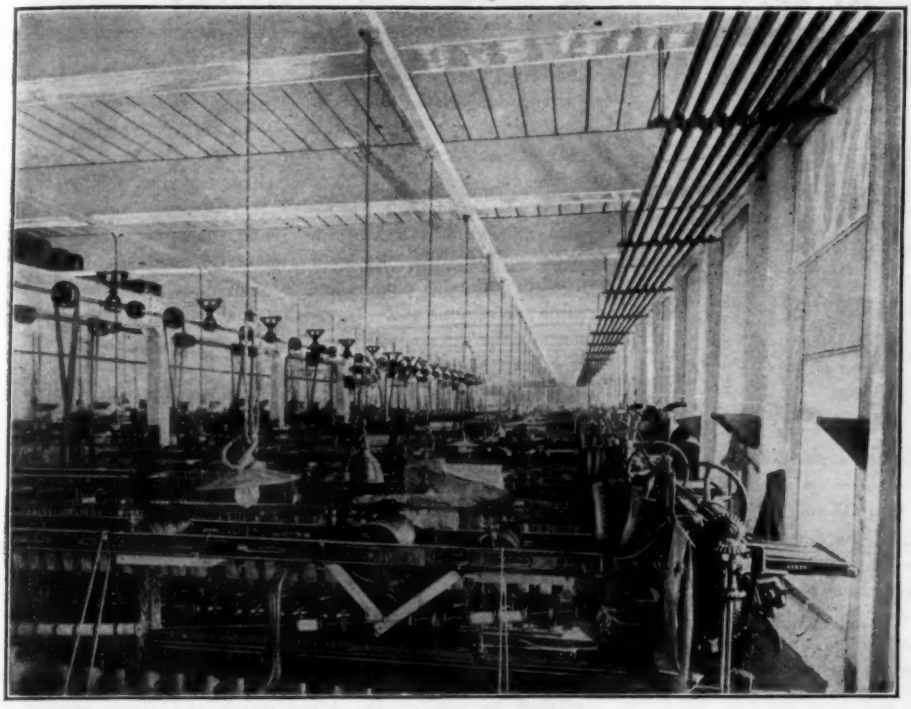

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harmful for the reason that the mill will get weak yarn, and this means seconds, low production and high cost.

Twist is very unwisely used sometimes. When properly used it gives strength and makes the work run good, but if not used properly it will do neither. Someone may ask how much twist should be used. Now that depends upon local conditions, equipment and the grade of cotton used. Standard twist, which we hear so much about, is all right to use as a basis, but you had better know what you are doing when you put it in. Experience has taught me that it is not practical to try to run a spinning room by what is seen on paper or by what the other fellow says. Theory and practice will not always work out alike here. It is best to use your own common sense and good judgment, sometimes.

Some of us today have become cranks upon the subject of speed one way or another. As for myself, I do not believe in high speed. It wrecks the machine and causes the work to run bad and that makes waste. And the more waste we make the weaker the yarn is, to say nothing of the cost of repairs and the dissatisfied help. There may be some who try to claim that it is from speed that we get our production. This is true in a way, but not altogether. There are lots of small leaks that might be looked after, thereby overcoming some of this high speed, such as bands off, ends left down too long, belts not looked after and doffing.

The last mentioned is one of the biggest problems a spinner has to do with. There are so many things in connection with doffing that it is hard to know just what is best sometimes. I am not able to set any standard by which to go, but I wish to call attention to the fact that the employees in the spinning room have been, and probably will be for a few more years to come, a handicap to the production, for the reason that in the past such small consideration has been paid to the class of help put in that department, since anyone, regardless of how incapable he might be, was considered equal to the job. The pay was naturally small; and as a result the best material went to the other departments of the mill, while the spinning room had to take what was left.

I am glad to say that this is not altogether true today. We are beginning to realize the importance of employing first-class help in the spinning room as well as in other departments.

We, as overseers and superintendents of the greatest industry in the South, are face to face with the most serious time the mills have seen in quite a while, and it is up to us to get busy and meet these new issues like men. The best way to do this is to remember the golden rule.

The Edw. R. Ladew Co., Inc., manufacturers of Ladew leather belting, with southern headquarters at Charlotte, N. C., in charge of O. S. Horton, branch manager, announces the appointment of W. E. Gipson as belting engineer for the state of Georgia. This places at the disposal of belt users in Georgia the advice and consultation of a man well qualified to handle any belting problem. Mr. Gipson will make his headquarters with the Fulton Supply Co., of Atlanta, who represents the Ladew line in that territory. Mr. Gipson has located at 319 Bedford Place, in Atlanta, Ga., which is more central for the southern district. This enables him to reach all points readily.

Dyeing, Bleaching and Finishing.

Corn Starch for the Textile Industry.*

BY P. W. ALLEN, M. S.†

It is an old saying that facts speak for themselves, and in the manufacturing industry it is generally agreed that facts do speak for themselves, but also it is sometimes desirable that facts about honest products should speak a little louder. Facts must not only speak for themselves but they must be heard.

The story is told of the Kentucky orator who came to the Chicago World's Fair to make a speech but during the day had imbibed a little too much of Chicago's best. When he arose to make his speech, "Ladies and Gentlemen," he stammered, then a voice from the balcony shouted, "Louder, please." The Kentucky orator shouted again, "Ladies and Gentlemen," and the voice from the balcony came again, "Louder, please," so he started his speech once more but this time sobered by his rage he began, "Ladies and gentlemen, when the end of time shall come and the angel Gabriel shall appear, and with one foot on the land and the other on the sea shall blow a blast on his trumpet to announce that time shall be no more, some darned fool from Chicago will shout, 'louder, please.'"

There are certain facts which during the last few years have impressed textile men:

(1) That an industry of great size as the textile industry must have great sources of supplies;

(2) That corn as a source of starch is an unlimited and also the most economical source of starch;

(3) That modified starches of absolute uniformity can be produced from corn starch;

(4) And lastly but not of least importance is the fact that the science of treating starch to give it desired properties which adapt it to industrial needs is not a dream but a reality.

The manufacture of starch from corn is carried out only on a large scale. A mill grinding 10,000 bushels of corn per day is considered a fair sized mill. There are several mills in this country which grind considerably more than this amount of corn. After seeing some of the train loads of starch used at some of the textile plants the average onlooker naturally asks, "Where in the world do they get all of this starch?" On the other hand, a man going through a modern starch mill naturally asks, "How in the world do they get rid of all that starch?"

Very little starch is made in the United States from any other grain than corn. Corn starch has proven most satisfactory as to quality and as to cost.

In the manufacture of starch there are different methods of separating starch from corn but there is only one process, the wet process, which produces a starch of high quality from corn. In this process shelled corn is purchased by the carload and is cleaned by fanning mills and sieves. After cleaning it goes to the steeps which are upright tanks holding about two thousand bushels each. In these large tanks the corn is steeped for about forty hours with warm water containing sulphurous acid, the sulphurous acid being used to prevent fermentation and to soften the glutenous part of the corn. From the steeps the softened corn goes to the degerminating mills, which tear the corn so that the germs are freed from the kernels. The mass from the degerminating mills is run into long vats where the germs are separated by taking advantage of the fact that they are lighter than the other parts of the corn and thus float while the other sinks. The germs float over a weir and are sent to the oil house to have their oil expelled, while the remainder of the corn constituents sink and pass down to fine grinding mills of the Buhr stone type which disintegrates the starch, gluten and fibre very thoroughly.

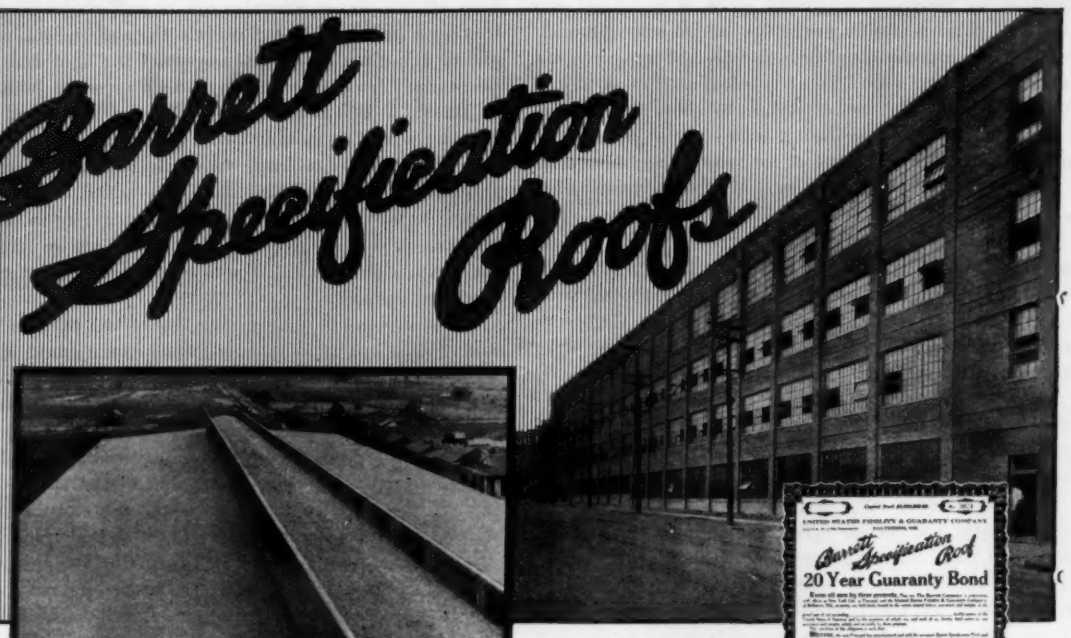
From the Buhr stone mills the finely ground mass of starch, gluten and fibre goes down through the mill house story by story passing through, first, perforated copper and then silk reels, the fineness of which being increased on each lower floor. These reels separate first the coarser material from the starch as the skins or bran of the corn kernel, the finest silk reels separating from the starch everything but the liquified gluten. The material separated from the starch by the reels is passed on to the feed house. The separation of liquified gluten from the starch is accomplished by passing the dilute starch and gluten mixture slowly over the long narrow tables which have a very gentle slope. The starch settles on these tables and the gluten flows off at the end. After tabling, the starch goes to large presses in which it is washed with filtered water until a starch of high purity is obtained. In the case of selling starch to the textile industry this purified starch is treated to modify it to meet the special demands of the manufacturer. The starch is then dried in large rotary vacuum driers. Great care is taken all through the processes for the manufacture of starch to keep it very clean.

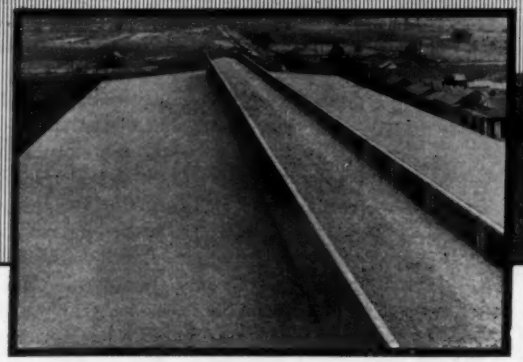
A story is told in California of the exactness of a certain wine expert. He was taken into the wine cellar to sample and judge some very fine wine. He sipped a glass of the wine and when his friend asked him for his expert opinion he said, "Well, it is indeed a fine wine, however, there are three things about the flavor which I would criticize; there is a very slight flavor of iron present, also a very faint suggestion of the taste of hemp, and also a faint flavor suggesting leather." The owner of the wine said, "Yes, you are right; I just now as I came in, accidentally dropped through the bunghole of the barrel the key to the cellar; it was an iron key and was tied to a piece of leather with a short piece of hemp rope." In any manufacturing process the larger things take care of themselves, while it is the smaller details which are governing the quality of the product and making one product superior to another. In the use of starch in the textile industry, or in other words, in the making and use of sizing, there are numerous small occurrences which effect results very seriously. I am going to touch on a few of these points from the standpoint of having studied what may happen to starch after it is once separated from its source, the plant.

There is no substance in nature which has a wider use or a greater variety of uses than starch. Starch is not just

*Read before the Soutern Textile Association at Greenville, S. C.
†In charge of the Research Laboratories of the Douglas Company, Cedar Rapids, Iowa.

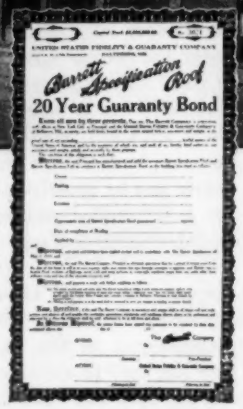
Barrett Specification Roofs





Barrett Specification Roof on Plant No. 3 of The Studebaker Corporation, at Detroit Mich. Roofers: The Howie Company, Detroit, Mich.

Photo at left: Barrett Specification 20-Year Roof on Acid Plant of Swift & Company, Harvey, La. Roofer: Kracke & Flanders Company, New Orleans, La. General Contractors: Hugger Bros., Montgomery, Ala.



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ordinary starch but has a great many very useful properties lying dormant in it. It can be modified by chemical, mechanical or biological treatment so as to bring out one or more of these desirable properties in the same product. We call these starches modified starches. Some may say that ordinary corn starch is of limited usefulness in the textile industry. The best evidence to show that this is not true of specially modified starches would be a document containing the addresses of the most progressive textile manufacturers of the country. We might recite what has already been made from ordinary corn starch to illustrate how far different products can be developed from plain starch. In this list would be included textile sizing starches, special laundry starches, special paper sizing starches, many adhesives as dextrines, gums, mucilages, glues, etc.; corn sugar, glucose, corn syrup, alcohol, wine, vinegar, flavoring extracts, perfumes, malt syrup, candies, etc. This is only a partial list but ought to impress manufacturers in other lines with the wonderful adaptations of corn starch, and that modified products can be made from starch which will meet special requirements.

The manufacture of these modified starches for the textile industry has become an enormous business. The installment of large conversion apparatus for the manufacture of these starches makes it possible that 60 tons of product can be made at one time. By the use of circulating systems in these processes, temperatures are maintained to the fraction of a degree and by practicing exact chemical treatment, standardized and modified starches of identical properties are produced day after day and can be reproduced at any time.

What happens to starch after the starch granules are bursted by heat in the boiling or sizing is a common query constantly coming up in the mind of every textile man. This question can only be answered by going into chemistry itself which we have not time to do here. However the general statement can be made that when once the starch granule is burst gradual change takes place.

All the pains and expensive control apparatus used by the manufacturers of modified starch is lost effort unless there is also in the textile mills equal control over the preparation of sizing. Kettles equipped with steam gauges, recording thermometers, and circulating systems for the size making gives control over the effect of temperature and time of cooking. Using nothing but standardized ingredients in the making of a size gives control over the effect of one ingredient upon another. Weighting all ingredients instead of measuring them by volume gives control over the effect of different proportions. It must be remembered that different steam pressures give different temperatures in the cooking size, this being absolutely true in the case of closed steam coils, in other words, the same pipe and open valve, admitting steam to the size kettle, will have the same effect only when the head of steam is the same.

In the mixing of starch with cold water in the size kettle it is well worth while to use special pains. It has been said that five or ten minutes of agitation is long enough. Here we have a good illustration of how cut and dried directions often give wrong impressions. Agitations of the starch and water in the kettle should be continued until each starch granule is suspended singly in the water. If even small groups of granules exist when steam is turned on, the outer granules burst and form a protection for the inner granules and the lump is formed, it may be a very small lump but nevertheless it is a lump and has its harmful effect in the sizing process. It is possible to know definitely when all the starch granules are in suspension singly, by dipping a piece of clear glass into the suspension and then holding the glass between the eye and the light and noting the presence or absence of any unhomogeneous lumps.

To insure that definite proportions of water and starch are always used in making size a suggestion might be taken from the factories or large wholesale bakeries where exact proportions of water and flour are added to the dough mixers by automatic machines placed right over the mixers. The sliding weights on two beams are so fixed that the dough mixers can add water and flour only according to a fixed proportion.

Why use modified corn starches in the preparation of sizing? This is a question of which there could be much said if there were time. No other product taking the place of modified corn starch can be standardized to the same extent. The purity of other starches varies with the weather, with the location, and the peculiarities of the soil, while the manufacture of corn starch due to the special fitness of the dry starch in the corn kernel is simply a question of the continual filling of elevators and the production of a high quality starch of great uniformity. Definitely standardized modified starches for the textile industry can be manufactured only from uniform starch such as I have mentioned as being produced only from corn. Corn starch mills run 365 twenty-four hour days each year. Mills making other kinds of starch run more or less spasmodically. You can draw some conclusions for yourself concerning the uniformity of product. There are two key words which are indelibly stamped on this new era which we are just entering, they are standardization and control, and more fully, complete standardization of products and perfect control of processes.

Appoints New Eastern Manager.

The American Steam Conveyor Corporation, Chicago, announces the appointment of Charles H. Florandin, formerly of the National Electric and Welding Company, New York, as general manager of their eastern territory with headquarters at their New York office, 110 West 40th Street.

Mr. Florandin, who assumes charge of his new duties May 1, was born in France and received his technical education at the famous Lycees de Marseilles. He is an engineer by profession and upon coming to the United States did important work with the Brooklyn City Railway Company in the early days when the road was being electrified. After five years service with this company, he joined the C & C Electric Company, New York, where he held a responsible position with them for many years.

After a brief connection with the Western Eletcric Company, he returned to the C & C Electric Company and later organized the National Electric and Welding Company.

During the War Mr. Florandin was a member of the Welding Committee of the Emergency Fleet Corporation and here did valuable work.

The sound engineering knowledge and the extensive acquaintance of Mr. Florandin among consulting engineers and power plant executives makes him a valuable acquisition to the American Steam Conveyor Corporation's organization.

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161 Devonshire Street

Southern Offices
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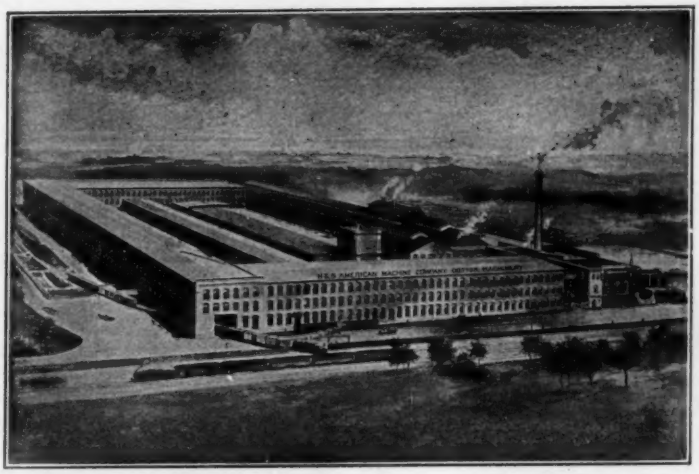
Atlanta, Ga.

COTTON MACHINERY

Opening and Picking Machinery

Card Room Machinery



Spinning Room Machinery

Twisters for Wet or Dry Work

With Band or Tape Drive

H. & B. AMERICAN MACHINE COMPANY

PAWTUCKET, R. I.

Notes About Men You Know.

BRIGADIER GENERAL WILLIAM H. ROSE, who was recently awarded the Distinguished Service Medal for his success in supplying engineering supplies to the army overseas while in charge of the Engineer Depot, has just been appointed manager of the New York office of Lockwood, Greene & Company, engineers. The appointment is effective May 1.

General Rose has been identified with the Engineer Corps of the army since his graduation from West Point in 1903. After service with engineer troops in Cuba and the Philippines, he was assigned to duty on the construction, operation and maintenance of all electrical installations on the Canal.

In June, 1917, General Rose organized and directed the General Engineer Depot, U. S. Army, where he was in charge of the purchase, inspection, production, shipment, storage, distribution, and embarkation of all engineer corps equipment and supplies. Purchases under his direction aggregated more than $100,000,000 a month.

Since last September, General Rose has been serving on the general staff of the army as director of purchase, of the purchase, storage and traffic division. In this position he has been charged with the purchase, inspection and production of all material formerly procured by the Quartermaster Corps, Corps of Engineers, Signal Corps, Medical Corps, and many articles formerly purchased by the Ordnance Departments and other bureaus of the War Department.

General Rose was awarded the Distinguished Service Medal on February 13th with the following citation:

> Brigadier General William H. Rose—while in charge of the Engineer Depot he was charged with the system of purchase of supplies. His exceptional ability, judgment, and resourcefulness are apparent in the efficient solution of the many difficult problems involved, and in the success attained in supplying the vast quantities of engineering supplies to the Army overseas."

C. E. DECHANT, who has had charge of the Reading, Pa., territory for some time for the Monroe Calculating Machine Co., and who has done some exceptionally good work in introducing the Monroe and developing the possibilities of the Reading territory, has been assigned to the office formerly occupied by J. H. Butner at Charlotte, N. C. Before taking over his duties in his new territory, Mr. Dechant spent some time at the home office of the company, working up ideas which he expects to put into effect in the Carolinas. Mr. Dechant went to Charlotte the first of March full of enthusiasm and good ideas which it is expected will develop much to the advantage of the business of those men who will have the opportunity of making his acquaintance as well as the acquaintance of the Monroe calculating machine.

Notes About Men You Know.

HARRY S. ROBERTS, who has been with the General Electric Company for 14 years, 11 years with the Atlanta office, and for the last five or six years in the mill power department, and who is well known to the textile manufacturers throughout the entire South, has recently resigned this position to accept a position with the Atlanta office of Lockwood, Green & Company, handling similar work.

JOHN L. DABBS has resigned as southern manager for the National Aniline & Chemical Co. to accept a similar position with E. I. duPont de Nemours & Co., of Wilmington, Delaware. The southern offices and warehouses of E. I. duPont de Nemours & Co. will be located on First Street in Charlotte.

T. J. RUSH has resigned as overseer of carding at Buck Creek Mills, Siluria, Ala.

J. W. JOLLY has resigned from McComb City Miss., and has accepted a position as superintendent of Lexington (S. C.) Cotton Mills.

WILL H. WILLARD has been promoted from assistant southern manager to succeed John L. Dabbs as resident manager for the National Aniline & Chemical Co., with offices in Charlotte.

WM. CRAWFORD has resigned as overseer of spinning at the Hampton (Ga.) Mills and accepted a position with Georgia Mills No. 2, Griffin, Ga.

L. H. GREEN has resigned as salesman for the National Aniline & Chemical Company to accept a similar position with E. I. duPont de Nemours & Co.

I. H. OWEN has recently been appointed district sales manager for the Economy Fuse & Mfg. Company of Chicago. Mr. Owen has the South for a territory with headquarters in Atlanta, Ga. Before coming South, Mr. Owen represented the company for three years in New Jersey and Eastern Pennsylvania and previous to that time was connected with the Western Electric Company. His long experience in the sale of electrical supplies and specialties fits him to serve the many users of Economy Fuses throughout the South.

JOHN W. H. BUCKLEY, of the textile section of the Bureau of Standards, Washington, D. C., was a visitor in COTTON'S offices recently. Mr. Buckley was journeying southward to attend the Columbus (Georgia) convention of the Georgia Manufacturers Association.

PAUL NUCKOLS has resigned his position as overseer of carding at the Exposition Cotton Mills at Atlanta to accept a position as superintendent of the Waste Plant with the Indian Head Mills at Cordova, Ala.

FRANK BENNETT, factory belt engineer from the home office of the Edward R. Ladew Co., Inc., has been spending the last two weeks in the southern district, giving expert advice to the trade from an engineering standpoint.

J. N. JEWELL, of Piedmont, S. C., has accepted the position of superintendent at Norris Cotton Mills, Cateechee, South Carolina.

E. K. DAVIS has received his discharge from service since returning from France. He was in the aviation corps where he held a commission. He has resumed his duties as assistant purchasing agent for the Fulton Bag and Cotton Mills, Atlanta, Ga.

CHAS. H. STONE, for a number of years with the National Aniline & Chemical Company, Inc., and one of its component companies, the W. Beckers Aniline & Chemical Works, Inc., has become associated with the Atlantic Dyestuff Company, whose works are located at Burrage, Mass., in the capacity of vice-president and sales manager. Mr. Stone's first connection with the dyestuff industry was in 1905, with the Farbenfabriken of Elberfeld Company, receiving his training under Dr. Wm. G. Beckers, then its technical head, since which time he has been associated more or less closely with Dr. Beckers almost without interruption. For the time being Mr. Stone will divide his time between the Boston and New York offices of the Atlantic Company.

A. CRAIGHEAD has just been appointed as the district manager of District No. 9 comprised of the states of Georgia, Florida, Alabama and eastern Tennessee with headquarters at Healey Building, Atlanta, for the Monroe Calculating Machine Co. Mr. Craighead succeeds J. C. Butner who has resigned to take up other work. Mr. Craighead has had a most successful experience with the Monroe calculating machine in New England and comes to the South with a thorough knowledge of the application of the calculating machine to mill accounting needs. Mr. Craighead's business is not simply to make sales but to look over figurework and make such suggestions toward economies and service that mill managers think worth listening to. That is the Monroe idea of service to customers or future customers.

J. J. GRAHAM, formerly overseer of carding at night at Rex Spinning Company, Ranlo, N. C., is now overseer of carding at Cleghorn Mills, Rutherfordton, N. C.

C. H. SAVAGE, superintendent of the Mt. Vernon, Nos. 1 and 3 of the Mt. Vernon Woodberry Mills, Baltimore, has resigned his position on account of ill health.

W. P. HAZELWOOD, who has been assistant manager and superintendent of the Profile Cotton Mills, Jacksonville, Ala., for the past six years, has resigned to accept a similar position with the American Net and Twine Company, Anniston, Ala.

EUGENE H. TIMANUS, formerly superintendent of the Druid Mill of the Mt. Vernon Woodberry group, Baltimore, has been appointed superintendent of the Mt. Vernon Mills Nos. 1 and 3, to succeed C. H. Savage, resigned.

G. H. LIETNER has accepted the position of superintendent of the Warren Mfg. Co., Warrenville, S. C.

ARE YOUR LOOMS DEPENDABLE?

You progressive textile mill owners value the dependability of your looms above any other quality. You know that dependable bearings are necessary for the constant operation of your looms.

You know that even under normal conditions the bearings are subject to heavy shocks. When a breaking thread operates the safety stop, the machine comes to a racking halt, and the shock is all concentrated on the bearings.

Hyatt Roller Bearings are shock-proof because durability is built into every one of them. They are capable of imparting their durability to your looms.

Your Hyatt Roller Bearing equipped looms will need little or no attention. They are fool proof, and require oiling only four times or less a year, for there is no leakage of lubricant.

Insure the maximum production of your mills by making your equipment dependable—specify Hyatt Roller Bearings for your looms.

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METROPOLITAN TOWER, NEW YORK

Manufacturers of Bearings for Mine Cars, Ore Cars, Steel Mill Cars, Roller Tables, Trolleys, Cranes, Hoists, Machine Tools, Line Shafts, Countershafts, Concrete Machinery, Textile Machinery. Conveyors, Lift Trucks, Industrial Trucks, Railway Service Cars, Storage Battery Locomotives, etc.

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1919

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Do you get the idea?

Peroxide bleaching can be done in the kier, reel machine, jigger or open kettle.

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New York, N. Y.

How Other Men Manage

Practical Discussions by Cotton's Readers on all varieties of Mill Subjects

What Makes the Kinks?

EDITOR COTTON:

Although I have been a subscriber to your valuable paper for a good many years, this is the first opportunity I have taken to write a letter. I have a friend who is being bothered by "kinks" in the cloth, and it seems to be on just one certain style of goods which is 28 inches wide, the same style in other widths being satisfactory. This friend told me that the spinner had taken the twist out of the filling yarn which is number 26s and put on heavier travelers. The carder has also taken twist out of the roving, but the kinks are almost as bad as ever. The spinner now says that the trouble must be in the card room, while the carder contends that the trouble is either in the build of the bobbin on the spinning frame, or else there is some difficulty in the shuttles on the loom, or some trouble with the filling forks.

This looks to me like a case of "pass the buck" but being a mill man myself I would like to have some of the readers of COTTON offer some suggestions as to the cause and its remedy. I might add to the statement made in the foregoing paragraph that everything was running smoothly until about three weeks ago when the kinks began to appear in the cloth. Justice (Massachusetts).

Why Card Flats Fill.

EDITOR COTTON:

"Regage (Conn.)" answers in a very practical manner in the May issue of COTTON, "Ben (N. H.)'s" query in regard to flats filling with cotton, his answer covering almost every point. But I think he answered in something of a hurry, or I believe he would have covered every one and I am only going over it again for three reasons.

First, to menton the causes "Regage" failed to mention, and to differ with him slightly on some things.

Second, to bring the subject before the readers of COTTON again, thinking some may see this letter that didn't see the other.

And last, but by no means least, the Smith Publishing Co. send me a check for writing any article they accept and publish.

Rusty wire will cause the flats to fill but wire will not get rusty from humidity while working because the cotton takes up all the moisture. Leaving the humidity running while the card is standing still over night, or while the cards are stopped for a day or so, is what does the damage.

Neither will water rust the wire if it is known when the clothing gets wet, and it is properly handled. When the wire gets wet from a leak or otherwise, stop the leak first, keep the card working if possible, sprinkle whiting on the wet places, and the cotton and air will soon dry the wet places. If too wet to run, or the front of the card gets wet so the ends won't stay up, fill all the wet wire full of cotton, and let it stand about half an hour, then clean out that cotton and fill in with dry cotton again, and repeat until the card can be put back to work.

Flats oil soaked from any cause will fill up, especially if running low grades, but oily cotton like sweepings will cause the flats to fill more quickly than most anything else. The most satisfactory remedy when the flats become oil soaked is to have them recovered.

The flat stripping comb set too close, too far away, having its teeth bent, or worn away will cause the flats to fill.

Dull, faced or barbed wire will certainly cause the flats to fill, especially barbed wire, as the stripping comb, although in good shape and properly set will not comb the strips off, and consequently the revolving brush pushes the fibres down in between the wires.

Dull wire is caused from too light grinding or not being ground often enough. Faced wire is caused from too close a setting of the flats allowing the wire to come in contact with the wires of the cylinder. The remedy is to grind the face off and a new point on, then set not quite so close.

As to what causes barbed wire, I beg to differ entirely with "Regage (Conn.)", as I have ground flats for a week at a time without barbing them, and put them to work after grinding this long, without burnishing. Barbed wire is often caused from the emery of the grinding roll becoming dull and slick or too slow speed of the grinding roll from a slack grinding band, or too big a pulley on the roll. If the flats are ground with new sharp emery, and the grinding roll revolving at high speed the wire is cut off clean, while if the emery is dull and slick the wire is cut off nearly to the point and bent over the rest of the way, or if the grinding roll slows up it has a tendency to mash the points over.

If the flats are barbed to the extent where the stripping comb, though in good fix and properly set, fails to take the strips from the flats, the quickest remedy is to run a burnishing brush against the points of the wire for about one round of the flats, or until the stripping comb will clean the flats, then grind the proper point on the flat wire.

Old flat chains becoming stretched allow the flats as they come around the pulleys at the back above the licker-in to stay tilted up with one edge away from the cylinder for quite a little distance, forming a pocket that fills up with cotton, then when the flat comes down to the cylinder there is so much cotton there in one place that some of the fibres are forced down in between the wire on the flats. This is another cause for flats filling.

Then again old flat chains becoming stretched, and not kept tight allow the flats to press against the top front plate causing it to mash fibres and motes into the flats, especially if the top front, or stripping plate is set very far from the cylinder.

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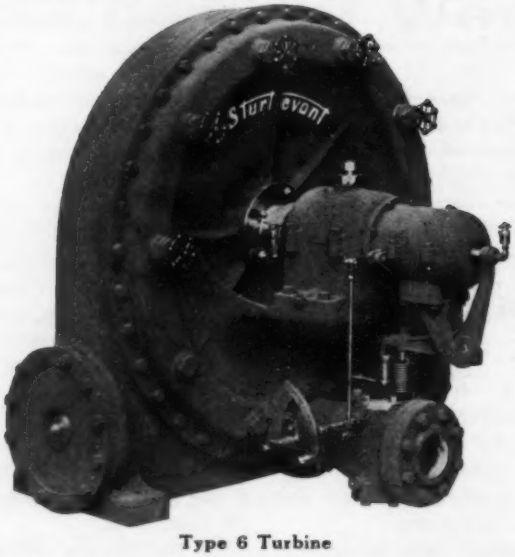

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I agree with about all "Regage (Conn.)" says except where he advises light grinding, for I believe the harder you can grind with your grinding roll up to full speed, covered with clean sharp emery, the longer the points on the wire will be, consequently, the sharper it will stay until the next grinding time. Nixie (Ala.)

Something More on Hard Ends..

EDITOR COTTON:

I see in the May issue of COTTON that "Wash" evidently does not fully understand the subject he is trying to tell someone else.

In the January issue of COTTON "Wash" was supposed to have received a letter from a superintendent of a cotton mill stating that during the past six weeks hard ends had been coming through in the spinning room and asked "Wash" to suggest a remedy.

Now "Wash" was giving advice to a man in regard to one particular case; namely that of hard ends in the spinning room. "Wash" tells this man the only remedy is to take the weight off the middle rolls. If this man had told "Wash" he did not have weight on the middle rolls, I wonder what "Wash" would have suggested as a remedy? Since taking the weight off the middle rolls is the only remedy according to "Wash," the letter in the May issue is not very consistent with the one in the January issue. In the January issue he says the only way to prevent hard ends coming through in the spinning room is to take the weight off the middle rolls. In my letter in the March number, I stated that I had done that without result. Now in the May issue "Wash" says it is a wonder the work ran at all before spreading the rolls. How does "Wash" account for this inconsistency?

"Wash" says, when there is too much twist in the roving the only remedy is to take out the twist. That is very good advice indeed but he did not explain that mixing in longer staple than they had been running would undoubtedly require less twist at the speeder to enable the roving to be drawn properly at the spinning room. In another paragraph "Wash" contradicts his previous letter again. In January he says to take the weight off the middle rolls. That was the first thing I did when hard ends came through the rolls. Now he says I tried the right method but went "about it in the wrong way to get results. Please let "Wash" explain.

Again "Wash" says, the reader can see at a glance that the back roving being used would cause trouble with or without roll weighting, for the reason of two extremes existing, extra twist and uneven staple. "Wash" evidently did not know that this roving would cause trouble until he read my letter in the March issue of COTTON, or he probably would have explained it more fully in his letter of January. The roving I had reference to *did not* have extra twist put in as "Wash" would like to have us believe.

My opinion is this. A cotton mill that has been running one-inch staple mixes in some one and one-quarter-inch, when it comes to the speeders the long fibres will be twisted harder than the shorter ones, not because twist has been put in, but because the long fibres take the twist better than the short ones, therefore causing the roving to come through the rolls in the spinning room without being drawn. Now in this case taking weight off the middle rolls, as "Wash" suggests as the only remedy, would not do good but in having the carder take out some twist, as the longer staple does not require as much twist as the short staple.

I think "Wash" should be more consistent when writing letters. A. B. C. (N. J.)

Keeping Numbers.

EDITOR COTTON:

To make an even yarn with the diameter the same at all places it is necessary to use cotton that has a fairly uniform staple, use proper roll settings with well balanced drafts, and keep the numbers or weight correct at all processes. Keep the weight at each process just like your job depended on them being right at that point, and the mill will turn out yarn or cloth that every one connected with it will be proud of.

There are two things Southern mills are going to have to do, sooner or later, to compete with New England mills. The first is to send their cotton buyer to market with instructions to buy cotton with one length staple; to have a standard fixed in his mind or have a sample of the standard with him, and not to buy any cotton very far either way from that standard. If the length of the fibers in the cotton being run have much of a variation in length it is impossible to get even, smooth work, for cotton of different lengths of staple will not draw alike, neither will harsh wiry cotton draw like soft cotton. The harsh, wiry, brittle cotton has no oil in the fibers, even a cotton eating cow won't have anything to do with a wiry bale of cotton. Any time you see a cow eating out of a bale of cotton you can gamble on its being soft cotton with oil from the seed in the fibers.

The second necessary thing is to do more testing as to breaking strength starting at the slashers, testing as to different qualities of size, different steam pressures and different tensions; then test as to different tensions and different speeds at the warpers and spoolers. Follow these by a test as to different roll settings, twists and speeds at the spinning frames and roving frames; then the different roll settings and speeds on drawing frames; then the different card settings; also look to the pickers as to beater and fan speeds. After this has been done once, it can be gone back over to see if the breaking strength can be improved any more, even if it isn't but one pound, that helps, and after the settings that give the best breaking strength have been determined, the looms should be tested as to speed and tension to see if any improvement could be made there. In fact it would be a paying investment to keep one good man busy testing breaking strengths all the time, provided the cotton was bought with that idea, for it would be foolish to try to maintain any certain breaking strength in anything like medium numbers when using all kinds of cotton.

But we started out to "keep numbers" and make an even yarn, and not to buy cotton, so we will do the best we can with what we have. Grade the cotton by staple so as to have as uniform a mix as possible. If mixing by hand, open as many bales at one time as possible; if mixing with the automatic distributor and blower or suction system, open a bale from each grade being used and feed to the

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Big Industrial Housing Properties of the U. S. Government and private corporations in the towns listed below are provided with Anchor Post Chain Link Woven Steel Fences:

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This illustration shows a section of the Industrial Housing Property at Mocanaqua, Pa., where Anchor Post Fences are used.

Anchor Posts are driven into the ground and then held rigidly and immovably erect by two anchor stakes driven diagonally through slots clamped to opposite sides of the posts. Anchor Posts have weathered the frost and thaws of twenty and more winters, and the hardest freeze has failed to disturb them.

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Strength and durability are the two important essentials for Industrial Housing Fences. They must be sufficiently strong to resist the onslaughts of the active small boy and sufficiently protected to resist the destructive effect of time and climate.

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CLEVELAND, O. Guardian Bldg.
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2251-G

Anchor Post Fences

bale breaker an armful from each bale in rotation. When using either plan keep the hoppers that feed the breakers as near the same fulness all the time as possible, for a full hopper will make a good deal heavier breaker lap than one nearly empty because the spike or feed apron, when the hopper is full, has cotton across its entire width, while when the hopper is nearly empty not over one-fourth of the apron is working, that is, not one-fourth of the width of the apron has any cotton on it.

Be careful to see that all the stripping rolls or stripping aprons are set the same distance from the spike aprons, as the wider the setting at this point the heavier the breaker laps, and the speed of all the spike aprons should be the same, as the faster the apron runs the heavier the lap. It is a good plan to weigh the laps from the breakers and adjust the settings and speed until the laps from the different breakers all weigh about the same, as this is the first place any actual weighing is done, and if the breaker laps are kept weighing the same it makes it a lot easier to keep correct weights at the succeeding processes. If running intermediate lappers, weigh the laps often enough to see they are weighing within one pound of each other; keeping two full and two half full laps on the apron help to keep the weights even. The evener belts should run a little to the right of the center of the cones, as this gives the evener a better chance with three laps and the ends should never be lapped over so there will be five thicknesses.

The finisher laps should weigh within at least one-half pound of the standard weight decided upon, and when this much variation is allowed, all laps over the standard can be marked in some way so as to distinguish them from others, while those that weigh lighter than the standard can have a different mark, that is, if the standard was 45 pounds, mark all laps that weigh from 45 to 45½ one color and all that weigh from 44½ to 45 another color, then have every other card marked for the heavier laps, and the intervening cards marked for the lighter laps, this would balance the difference in the weights and keep all the heavy laps from getting together, and all the lighter ones from being together.

The machines in the picker room must be watched and kept set right and all the same way or the laps will have thick and thin places in them and will split if the air currents are not handled correctly. Often the apron will pause a moment from being too slack, or from a choke, and cause a thin place in the lap which might otherwise be too heavy, but the thin place, or several thin places cause the lap to weigh right as to number of pounds, when its weight per yard is wrong. It's a good plan, when having trouble with split laps, to throw all the cotton possible to the top screen, if this, together with the modern split lap preventer, does not stop the laps from splitting, the bottom screen can be covered with tin or copper. It is impossible to keep even numbers when the laps are splitting, and a good, even, firm lap has to go to the card or all that can be done afterwards will not correct the bad results from a poor lap.

To keep numbers even on the cards it is necessary to take out the same amount of strippings and other waste from each card, and to know when this is being done it is necessary to have practically the same amount of belt slippage or the same speed of all parts. The holes in the trumpets have to be all the same size; the calender rolls have to all be the same size; and the wire of the clothing has to be practically the same sharpness as a dull card will make a lighter sliver than a sharp one because it holds more of the fibers or gradually gets more of a load than the sharp ones. Strip every other card, or every other line of cards and let the card fill up after stripping before putting up the end. Have cans doffed before getting full enough to lift the tube gear. Have laps all creeled in behind at one time and never let the extreme end of a lap feed in.

If combing or double carding, the sliver from the cards go to a sliver lap machine, the cards marked for a heavy lap should have one color of can, while the cards marked for the light lap should have some other color of can, and these cans in going to either the sliver lap machine or the drawing frames should be set in half of one color, and half of the other color to each head, thus again equalizing the lighter and heavier weights. The tension between the front rolls and calender rolls of both sliver and ribbon lap machines must be kept just slack enough to keep the product from stretching. The stop motions should be working perfectly, and the hands taught not to make either singling or doubling.

The combers must be set to make as near the same amount of waste as possible or else there will be a large variation in the comber sliver. As it is hard to make the combers all work just alike, it is a good idea to weigh the sliver from the combers and determine the one from which the sliver continually runs a little light and use a different colored can on the ones that run heavy from those that run light; then set these cans in at the drawing half and half, thus giving the drawing this much advantage to start with.

It is pretty well understood that the drawing frames must be properly cleaned and oiled periodically. Stop motions working perfectly and all worn parts repaired or replaced. The hands must be taught to piece drawing at the ends, as an inch here makes as many inches of thread as the product of all the succeeding drafts divided by the product of all the succeeding doublings, and it is a good idea to explain this to the drawing hands so they can understand it, as a lot of bad work is caused by these hands not knowing the injury that results from their carelessness. Also it is a good idea never to let the opportunity pass to explain to a hand that anything that hurts the work and the mills, hurts the hand also. Keep the tension between the front rolls and calender rolls just the "least bit" slack. When using metallic rolls, the smaller the collars wear the slacker the ends will run and the calender rolls will have to be speeded up a little to overcome it and when the collars wear enough to let the flutes mesh deep enough to mark or cut the fibers, it is best to get new rolls, but failing this, the flutes can be cut off some with a fine file or turned off in a lathe. However, this is not as satisfactory as new rolls. The drawing cans should not be allowed to run full enough to stretch the sliver against the tube gear. The work should be weighed at the cards, combers and drawing at least two times each day to keep up with the variation and see that it is not too great.

All the drafting rolls on the roving frames, including the drawing frame rolls, have to be spread to suit the sta-

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Why do you keep a stock of repair parts which are likely to break or wear out? *To provide against contingency*, of course.

But do you *provide against certainty?* You *know* that the weather will be hot and stuffy this summer. You *know* that you will have difficulties of operation and *labor*. You've always had, haven't you?

Have you *provided against this certainty* by installing equipment for *manufacturing your own weather?*

Nearly two hundred of America's finest mills have installed Carrier Conditioning Equipment for providing clean, humidified, heated air in winter, and clean, humidified, *cooled air in summer?*

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It tells the story of "Every day a *good* day."

Write right now.

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ple, if too close the work will be lumpy, if too wide it will have thin places in it.

Most mills have rules for cleaning and oiling that if carried out will take care of this part of it. The principal things to watch on the roving frames is the tension, the creeling, wrapping the pressers a different number of times, keeping the rolls in good shape and especially don't have the speed higher than the frame will stand. Tension should be regulated, so the frame will run through the doff without "taking up" or "letting off." Every other bobbin or every other line of bobbins should be creeled at one time, thus equalizing any difference in weights and the bottom of the skewers should be kept pointed so as not to stretch the roving. When sizing the roving, get as many bobbins from the back line of spindles as from the front line and if running several frames on one kind of work the bobbins to be sized should be taken from all the frames and not from just one.

If the roving is perfect when it reaches the spinning there are several things here that will undo all the careful work that has been done, namely: neglect of proper cleaning and oiling; travelers too light or too heavy; rings and travelers worn; and one cause of a great deal of uneven yarn is in those mills that have changed from making heavy to finer yarn without changing their rings to a smaller size. When every other condition is right, if the top rolls need recovering and are not properly cleaned and oiled and calipered, the work will be bad and run bad. Guide wires have to be set to top of the spindles and the spindles plumbed, the bands tight and made from roving. Skewers must not be blunt at the bottom and should be kept clean. Worn out bobbins and quills will jump and vibrate, causing more bad work. Trumpets and guides full of loose cotton or waste and small laps around the steel rolls will make the yarn uneven.

Too much tension on the spoolers or warpers is bad and about the only way to tell when it is slightly too much, is to try the breaking strength at different speeds.

Perfectly good yarn can be ruined at the slashers with too much steam, too much tension or a wrong size.

If the warp reaches the weave room in perfect shape it can be weakened by having the whip roll and sand roll too high, thus putting too much strain on the yarn.

Most mills have rules in all the departments that, if adhered to, take care of the machinery and the quality of work, but it is one of the easiest things in the world to become careless, especially when apparently everything is going all right, and remember, it's the little things that trip us up, one here and one there, all working together.

A. L. A. (Ga.)

The United States District Court at Cleveland has recently signed decrees restraining Joseph O. Cormier, as manufacturer, and Wovenright Knitting Company, as user, from making, using and selling infringing "Cormier" hosiery drying and shaping forms. These decrees were entered by the court in two suits instituted by the Paramount Hosiery Form Drying Co., of Chicago, under several of its patents to protect its own rights thereunder and the rights of the Paramount Form licensees and users.

Fly Frame Speed and Production.

EDITOR COTTON:

In the December issue of COTTON, on page 85, second paragraph, occurs the following statement:

"But finally I got permission and gradually reduced the spindle speed from 1,250 revolutions per minute to 1,100 revolutions per minute by drops of 25 revolutions per minute, or as near that as possible. As the speed dropped, the production increased until we reached 1,100 revolutions per minute. At this speed the production dropped slightly, so we went back to 1,125 revolutions per minute and made this the standard spindle speed. At this speed the frames showed by actual test that they would produce more pounds than at any other."

But why? The writer had the same experience only vice versa, that is, I increased the spindle speed from 1,080 to 1,315 and increased the production of the room from 34,000 to 42,000 pounds. We hear a great deal of late about speed reduction giving a large production, but very few tell us why this is possible.

My only object in writing is to help out the beginner, and for fear that some may immediately reduce their spindle speed to 1,125 revolutions per minute, I hasten to write this article. I do not question that Mr. Ford was dead right in the case referred to, but I fear that some may not see what Mr. Ford intends to convey to the readers, therefore, I endeavor to explain it here.

Any variation in speed between one frame and another will require a different cone. Certain types of differential motion will require a different cone. The same can be said of different flyers, different cottons and different hanks—to give a perfect tension they require different cones. Mr. Ford omitted to say that on any fly frame run at precisely the same speed at which the cones were figured and for which the flyers are built, a practically perfect tension is accomplished.

Let us first consider how the speed of the frame affects the tension. The faster the flyer is made to revolve, the greater the pressure at the termination of the presser finger. Again, this pressure in addition to the natural draw of the flyer produces a very firm and compact bobbin. This pressure reduces the thickness of the layers when the bobbin is small, so that more layers are needed to make a given diameter of bobbin. From the foregoing it should clearly be seen that different speeds require cones of a different outline.

If cones are figured out theoretically correct for a spindle speed of 1,125 and the frame is run at a spindle speed of 1,250 revolutions per minute, the increased speed will cause the frame to run slack, and even when the rack gear is changed the condition remains almost the same, simply because the intermediate speeds are wrong.

To get the true outline of cones, the bobbin of roving must be considered layer by layer, and the cones as a continuous string of separate pairs of pulleys, one pair to be used for each separate layer upon the bobbin. On the other hand, if cones are figured out theoretically correct for a spindle speed of 1,250 revolutions per minute and the frame is run at a spindle speed of 1,125 revolutions per minute, the decrease in speed will cause the frame tension to run tight, due to the decreasing pressure at the

THE UNIT HEATER

was first placed in use in 1870 by B. F. Sturtevant, founder of the B. F. STURTEVANT COMPANY. Since that time, through careful study and engineering practice, the present day Portable Unit Heater has been perfected. It is just one of the large and growing family of

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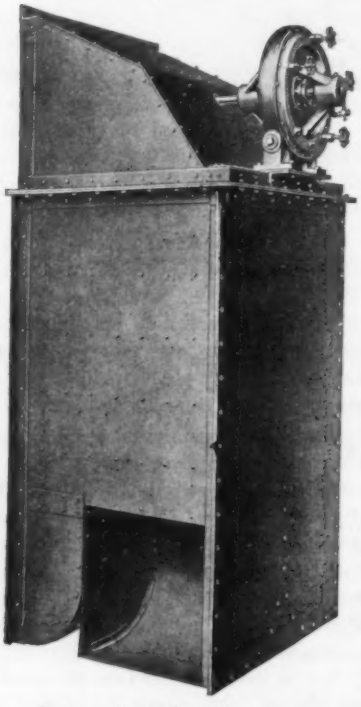

Independent Unit Heater.

It's relation to the heating of shops and factories is similar to replacement of the old line shafting, by the unit motor drive.

It eliminates expensive, cumbersome overhead piping; it warms just the portion you wish heated; the exhaust steam from the small turbine, driving the disc or propeller fan, heats the steam coils. It's economy is apparent, and it's efficiency has been proven.

The following are typical users:

HYDRAULIC PRESSED STEEL CO.
AMERICAN LOCOMOTIVE CO. (5 plants)
BATES MACHINE CO.
CLEVELAND WINDOW GLASS CO.
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MERRILL SILK CO.

Our Engineering Staff, with the benefit of this fifty years of experience is at your service. Estimates given without obligation.

B. F. STURTEVANT COMPANY

Hyde Park, Boston, Mass., U. S. A.

AND ALL PRINCIPAL CITIES

termination of the presser finger, which allows the diameter of the bobbin and strand to expand, so less layers are needed to make a given diameter of bobbin.

Let us next consider the difference between the Houldsworth compound and the new differential motions. With the Houldsworth compound the bobbin and the spindle revolve at the same speed without the additional impetus caused from the cone. Any compound which embodies this feature of having the spindle and bobbin revolve together is a more simple proposition as regards the cones, than a compound wherein there is a differential, or a difference in speed between the spindle and the bobbin. This is for the reason that in consequence of that difference in speed, the cones must be of a different form.

Wash. (N. H.)

A Question for Carders.

EDITOR COTTON:

We learn by theory and practice that in running staple cotton of different lengths a great deal of attention must be given to the setting of the feed plate. For instance, when using one-inch cotton the distance from the nip of the feed-roll and bite of the licker-in teeth should be 1⅛ nches, and when using 1⅛-inch staple the plate is set so that this distance is 1¼ inches, and so on, having the distance between the nip of the feed-roll and bite of the licker-in one-eighth of an inch longer than the staple used. In order to receive the full advantage of the feed plate it must be shaped to suit the staple of cotton that is being worked, so the gradual and not the sudden detachment of the fibres should be the aim at this point. In other words, a short nosed feed plate is used for short staple cotton and a long nosed feed-plate for long staple cotton.

We are told that if the distance between the bite of the licker-in and feed roll is shorter than the staple used, the staple is badly injured. Let us have no argument on the above points.

Let us now consider the distance between the heel of one flat to another on any revolving flat card. The space between the heel of one flat to another is not considered by the manufacturer or builder, for the reason that the space at this point does not exceed 1¾ inches. Is it not strange that we give so much attenton to the bite of the licker-in, and little or no attention to the grip of the flats? Is it not just as important to have the same distance between the heel of one flat to another as having a special feed plate for longer cotton? As stated, the distance here is 1¾ inches, now what happens in this space when running a staple 2 inches and over?

It must be borne in mind that the number of points of wire to the square foot is much greater, and the wire much finer and much sharper than the licker-in teeth. Is it not fair to assume that the points of one flat have the same grip as another, and if this is true are not the fibres injured at this point the same as between the licker-in and feed roll?

Is it not fair to claim that a much stronger yarn could be obtained if the same rule was adopted for the flats as for the feed plate and licker-in? To my mind, I think any builder would make a hit here by working a wider flat for all fine goods mills. Let's hear from others!

Wash. (N. H.)

Ball Bearing Manufacturers Combine.

Of interest to users of bearings is the announced reorganization, effective May first, whereby the products of the Hess-Bright Manufacturing Company, the S K F Ball Bearing Co., the Atlas Ball Company and the Hubbard Machine Company will be sold through one central organization. The new company, under the name of the S K F Industries, Inc., will thereby be able to offer a comprehensive line of ball bearings, including the Hess-Bright deep-groove type, the S K F self-aligning radial and thrust bearings and ball bearing pillow-blocks and shafting hangers.

Through the medium of its engineering organization, backed up by a well equipped laboratory, the new company will be able to place at the service of bearing users the knowledge gained in many years' study of anti-friction bearings of all kinds. On request, manufacturers' problems will be analyzed in detail and that type of bearing recommended which (independent of sales considerations) is best suited to the conditions met. In addition the laboratory staff will carry on research studies affecting anti-friction bearing design and application.

The new company—S K F Industries, Inc.—will be under the direction of B. G. Prytz, president; W. L. Batt, vice-president. The principal office will be at 165 Broadway, New York City, with branches at Boston, Philadelphia, Atlanta, Buffalo, Cleveland, Detroit, Cincinnati, Chicago and San Francisco.

Spring Painting.

"When spring unlocks the flowers to paint the laughing soil."—Bishop Heber.

The famous bishop was a good churchman and a good poet. No doubt he was a good painter, if he set his hand at it. When he painted his rectory, it was painted in spring, no doubt, so as to attune together house and nature.

Dixon's Silica-Graphite paint makes an excellent decorative paint. It comes in four colors, natural color (dark gray), olive green, dark red and black. The trimming can be done in a lighter color.

Dixon's paint is a great protective paint for metal work, used against weather, wear, acids, gases, alkalies, smoke and other deteriorating agencies. Labor is now so expensive that it is wise to "paint once and be done with it" for years.

To put off painting in spring is something nature would never do, to quote the good Bishop Heber. Why should man? Moreover, many a hero needs a "job." He has just painted "finis" on our foreign enemy. Start new work. Touch up old work. Keep the boys busy and keep things looking bright this victorious spring.

To take care of the rapidly increasing demands for tourist accommodations in the Salt River Valley of Arizona, which has become one of the garden spots of the west, a number of big business men of Phoenix, have organized the Salt River Valley Hotel Company and are planning the early construction of a handsome tourist hotel to be known as "The Arizona." Edward F. Parker, general manager of The Southwest Cotton Company, which operates the big 40,000 acre cotton plantation of The Goodyear Tire & Rubber Company, located in this valley, is president of the new hotel company.

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CUTS OUT THE "STAINED GOODS" LOSS

For Better Loom Lubrication Use Slo-Flo No. 25

A scientific lubricant made specially for loom use. By improving the lubrication of all loom parts, Slo-Flo helps to *increase production.*

And Slo-Flo *stays on the bearings.* It does not drip, climb or spatter. This means—*No loss from stained goods.*

There is a Slo-Flo for every textile machine.

The nearest Slo-Flo Distributor will be glad to give you a liberal sample gratis.

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SCIENTIFIC LUBRICANTS for SCIENTIFIC LUBRICATION

Developing Latin American Markets.*

BY MANUEL GONZALEZ.†

During the National Foreign Trade Convention, held in Washington in May, 1914, many men of a high standing in all the great activities of this country, enlightened the American business man on the same subject and impressed upon the minds of all who heard or read their masterful discussions the idea of the immense opportunities that the near future had in store for the development of American trade in the four corners of the world.

None of those far-sighted speakers had the faintest idea that only one hundred and sixty days later the whole world would be thrown by the sole ambition of an autocrat into the most tremendous struggle in the history of humankind —that all theories, all doctrines, all calculations would crumble like so many cardboard castles at the blast of the hurricane; and that this country, this peace loving country, though unprepared for the gigantic task, had to become mixed into the maelstrom and to play the glorious role of liberator of the human principles of Liberty and Justice.

But fortunately for the American people, and for the world at large, we have come out of the tangle wiser and with greater energies and optimism.

During the four long years of the great war, this country has been the money lender and the furnisher of the whole world, bending its large resources and energies to the sincere fulfillment of its tremendous task with the result that we are now far advanced in the way of foreign trade not only in the markets which by reason of our geographical position logically were ours, but also in those where our goods were in a disadvantageous condition before the industrial products of other countries.

To keep as much as we can of the already acquired fields and to enlarge them to the limitations of our capacity, is and has to be the patriotic scope of all the forces constituting the industrial power of the country.

For the time being, our competitors are unable to take from us what happy combinations have put in our hands. Germany, financially and industrially, is and will be for a long time, out of the question. Belgium, France and Italy will be, for some years to come, confronted with large reconstruction work at home to be able to victoriously carry the fight; and Great Britain has to be for a long period busy resolving the very important problem of labor and capital and healing its own serious wounds, to be considered as an immediate menace, though it shall not by any means be considered of no consequence.

And I have to confess it, and will confess it with real pride, America is aware of its own advantages and is amply prepared for this new fight.

Optimism, self-confidence, realization of our own strength and conscientious knowledge of our inexhaustible resources are the only things we need.

Well, gentlemen of the Georgia Manufacturers' Association, my speech will not be what the program reads, it will be only and simply a hearty message of optimism, a word of encouragement to be heard among the nation-wide chorus of pessimism and fear which we have been hearing from the moment the armistice was signed. I come in behalf of the National Association of Manufacturers of the United States to tell you to brace up.

Trade between merchants obeys but one law: Convenience.

If the merchandise the American producer offers to the foreign buyer is good and is satisfactory and if, furthermore, the buyer is allowed to pay for it at his convenience, nothing will be strong enough to avoid the transaction.

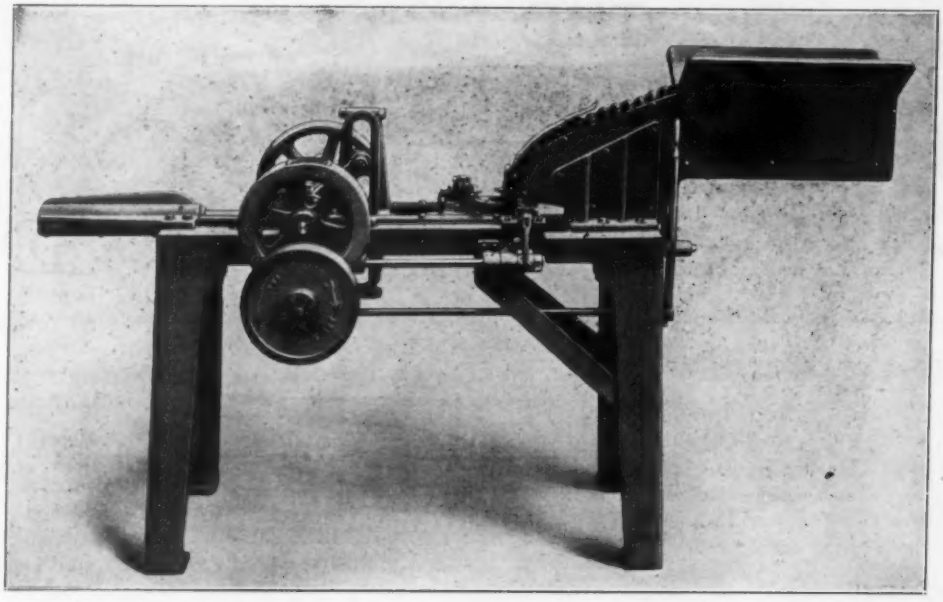
Now, the products which the United States has for many years been offering in the markets of the world not only are good—they are excellent. To deny this fact is not to be familiarized with these matters and is to allow one's self to be converted into the innocent echo of the well calculated and hypocritical propaganda which some competitors, and especially the Germans, have been carrying on many years before the war, when they began to feel the weight of the firm ascendent march of the American products in the markets which they had considered as their own for many long years.

The matter of prices, which on account of conditions prevailing before 1919, was a very serious one to deal with, has been disposed of by actual conditions prevailing in the competing countries. European nations, loaded with debts, taxes and colossal contributions, having to attend to their own reconstruction and existence under difficult circumstances, will not be able, for several years to come, to offer keen competition to this great country, the creditor of nearly all the countries in the world, abundant in capital, with prime materials of its own in great quantities and everything it needs at the reach of its hands; with a population eager for work and profit, active, energetic, intelligent, enjoying perfect freedom and already accustomed to an immense industrial production in the four years during which this country has been the furnisher of the world.

We have broken already the old mouldings, and adjust-

*An address before the Georgia Manufacturers' Association at Columbus, Ga.

†Chief Latin American Trade Division of the National Association of Manufacturers.



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It cleans feeler bobbins of the Draper type— 4500 per hour

We also build a double-end type having twice the above capacity. Let us send you our new catalog.

THE TERRELL MACHINE CO., Inc., Charlotte, N. C.

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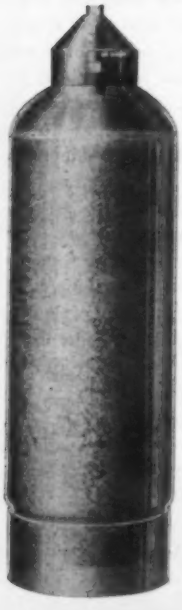

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Commercial Acetylene comes in portable cylinders of the following sizes:

10″ x 30″ containing 125 cu. ft.
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ing ourselves to the demands of our customers, we have already adopted the so much talked about policy of long credits used by our competitors. Leading North American banks have established agencies and branches all over the world, thus facilitating interchange and taking from the hands of the exporter any negotiable documents which he may offer them on clients deserving confidence for their trustworthiness and responsibility. Every day large sales are made on terms of 30, 60, 90, 120 and even 180 days; considerable credits are open, and negotiations of great importance are made without exacting advance or cash payment. Confidence born from careful and conscientious investigation has operated this change of policy.

To those who have been living in the clouds but who are always ready to criticize, to these apostles of destructive criticism who are constantly accusing the North American exporter as lacking study of the foreign commercial atmosphere, we feel bound to say that during the last four years there has not been a corner of the world into which numerous agents sent from the United States have not carried their investigations. They have represented manufacturers, export houses, banking institutions, merchants associations, chambers of commerce, government bureaus, and educational institutions, all of them well selected for the task; they have gone observing, studying, taking notes, establishing agencies, fixing relations and points of contact in all places considered as important. They have accumulated an immense wealth of knowledge that has been spread through correspondence, bulletins, daily papers, reviews and books. In the principal commercial and industrial centers of the United States, courses are given and conferences are held and all interested persons are taught everything that can be learned on foreign trade.

For many years there have been established in this country—and still more have been established in recent times—numerous associations of exporters, of merchants, of shippers, of manufacturers, etc., amongst which are the Georgia Manufacturers' Association and the National Association of Manufacturers of the United States, which I have the honor to represent here. Several of them have special departments for the study of foreign trade and are constantly communicating to their memberships the result of their investigation, giving them advice, notifying them of any changes which may occur, showing them opportunities and warning them against probable risks. Our organization has correspondents all over the world, and their periodical reports increase the already enormous wealth of knowledge accumulated. The American government has established special trade offices in its embassies and legations and its Consular Corps, carefully selected for the purpose, is today a valuable source of commercial information. Not only the mails, but also the cables are daily used for reports, so that the American business man knows any happening of importance which may occur in any remote part of the world, a few hours after it happened.

Nothing more could be done.

Nature has give us a large share of its immense treasures, the Lord has blessed this country, conditions are favorable, opportunities are plentiful, all we may want through channels of justice and equity, will be ours.

The distribution of staple goods in foreign markets is largely dependent upon the ability of the distributors.

Convention Notes.

(*Continued from page* 480.)

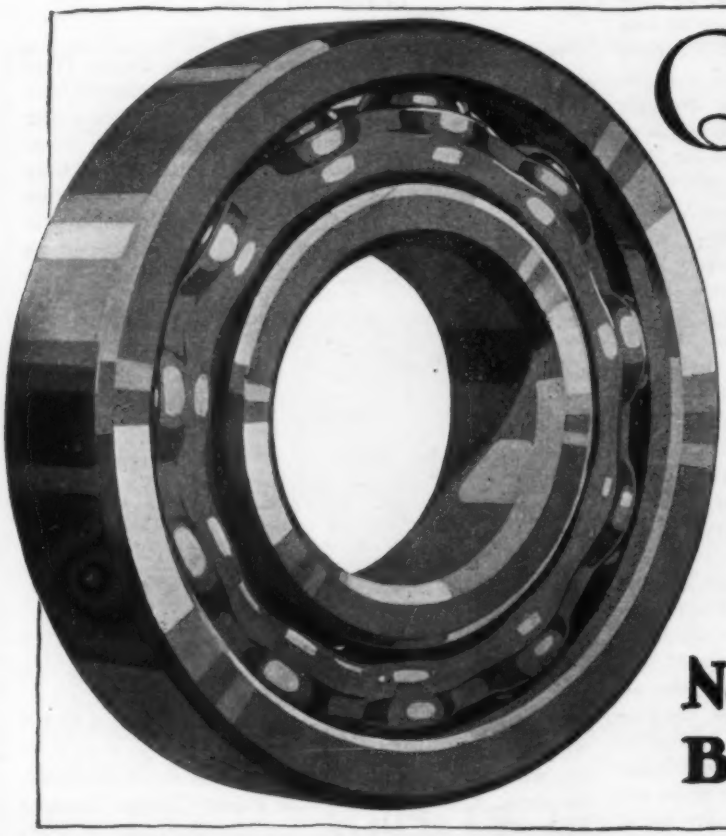
Leon B. Rogers, general manager of the Rogers Fibre Company, who produces the well known Leatheroid line of textile receptacles, brought with him to Greenville a pair of white trousers. Not content with bringing these trousers to Greenville, he persisted in his attempts to wear them, thereby incurring the displeasure of the local weather man. Many people present at the exposition wondered at the frequent showers which arrived at the most inopportune and unexpected moments, but the majority of them never

thought of connecting this displeasure on the part of the weather man with Leon's frequent attempts to wear those trousers. The accompanying photograph shows R. E. McCausland, field manager of the Barber-Colman Company of Rockford, Ill., on the left and Mr. Rogers on the right. It is only fair to the photographer to admit that this photograph was made on Saturday morning immediately after breakfast, and that Leon did not have on his white trousers.

FRED S. KLEBART.

Fred S. Klebart, field manager of the Textile and Tanning Departments of the J. B. Ford Company, Wyandotte, Mich., was the director of the chorus of the country club entertainment on Wednesday afternoon of show week.

Charles G. Sherman, manager of the Atlanta branch of the Main Belting Company, was in charge of the exhibit of this company and was kept busy explaining to the lady visitors at his booth that the handsome young man whose photograph graced the story of his exhibit in the May issue of COTTON was married.



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WHEN production and performance were both speeded up under war demand pressure, ball bearings made superaccomplishment possible.

Now that the war has been won manufacturers and users of machinery are utilizing the proven advantages of ball bearings for securing mechanism efficiencies and economies that are almost as important in peace times as they were in war work.

New Departure ball bearings will improve your machine and give you a talking point over the manufacturer who does not use ball bearings.

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ESTABLISHED 1831

TEXTILE MACHINERY

Manufacturers of

LONG-CHAIN QUILLING MACHINES

for

Colored, Bleached and Mercerized Yarns.

The Use of This Machine Insures:
First Quality in Product,
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Full particulars on request.

MAIN OFFICE AND WORKS
WHITINSVILLE, MASS., U.S.A.
SOUTHERN OFFICE CHARLOTTE N.C.

A. D. Davies, sales manager for the southern division of the Felt & Tarrant Mfg. Co. of Chicago, was present at the comptometer exhibit, and proved himself a very able demonstrator upon occasion.

The Glauber Brass Mfg. Company of Cleveland, Ohio, manufacturers of drinking fountains for cotton mills, were represented at the show by the L. L. Barr Company of Greenville, S. C.

R. E. PERRY.

One of the features of the country club trip on Wednesday of show week was the operatic sketches that were put on by an artistic group of vocalists aided and abetted by R. E. Perry, manager of the lamp department of the Central Electric Company of Chicago. Mr. Perry, whose photograph we reproduce herewith, conducted the orchestra which consisted of a piano. Mr. Perry developed so much ability in this line that a liberal monetary donation was collected for his services by the other performers in the cast.

James Strang of the Boston office of the Saco-Lowell Shops was another New England man to spend a week in Greenville.

Harry Cole, superintendent of erection for the Saco-Lowell Shops, also spent several days in Greenville.

R. J. Freitag of the Steel Heddle Mfg. Company of Philadelphia, Pa., who has been making a general survey of southern mill conditions, stopped over at the exposition on his way back to Philadelphia. He was on the floor of the convention hall shaking hands with his many friends during the short time he was there. He was accompanied by Hampton Smith, his southern representative, who has headquarters at Greenville.

N. C. Cordon had charge of the exhibit of Pratt and Lambert, Inc., and was showing the excellent results accruing from the use of "lyt-all," the industrial wall coating manufactured by this company.

J. L. Glenn, southeastern sales director for the Peaslee-Gaulbert Company of Louisville, Ky., had an interesting exhibit of his company's products.

W. S. Petty was in charge of the laundry machinery section of the exhibit of the American Laundry Machinery Company of Cincinnati, Ohio. Mr. Petty has had a great deal of experience in the installation of cotton mill laundry equipment and was kept busy explaining the many good points of this equipment during show week.

M. C. Thompson, president of the General Mill Supply Company of Charlotte, N. C., was one of the visitors at the show.

C. E. DeChant, district manager for the Monroe Calculating Machine Company, was in charge of the exhibit of this company at Greenville.

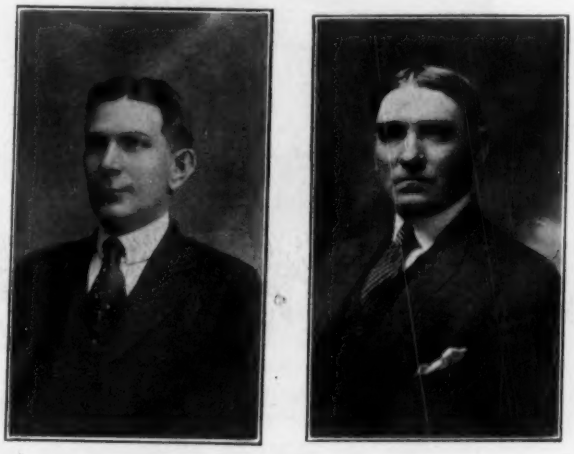
H. G. DeChant, vice-president of the Monroe Calculating Machine Company with general offices at the Woolworth Building, New York City, was a visitor at the show for one day only.

Hart B. Hill, manager of the Philadelphia branch of the Strong, Carlisle and Hammond Company of Cleveland, Ohio, was in charge of an exhibit of the products of this company including Strong traps, "mac-it" set screws, and other specialties. The "mac-it" safety or hollow set screws attracted the attention of many mill men who stopped at this display to investigate the details.

E. S. Burnett, research engineer for the Normalair Company of Winston-Salem, N. C., was present at the exhibit of this company during the week.

J. M. Broom of Greenville, S. C., was representing the Belmont Iron Works of Philadelphia, New York and Eddistone, Pa., Mr. Broom is well known among southern mill men, and was kept very busy greeting his many friends at the exposition.

C. E. Hathaway, president ofthe Stanley Belting Corpotion, 38-40 South Clinton Street, Chicago, Ill, attended the exhibit of his company which was under the direct management of E. S. Player of Greenville.



LEFT TO RIGHT. BUCK LATTAMORE AND L. PADGETT, TWO OF THE SWAN & FINCH CREW OF GREASE ARTISTS.

H. C. Hackett, sales manager for the American Vulcanized Fibre Company of Wilmington, Del., was visiting the exposition and carefully studying the conditions in the textile industry of the South as developed by his contact with the mill men present.

One of the profound mysteries of the show, and one upon which perhaps more amateur detective work was being done than was the case with any other feature was the seeking of the identity of the man who was distributing the left handed cork screws. Some of the seekers for information seemed to have friendly intentions, while others hinted darkly at concealed weapons and revenge.

O. R. S. Pool, district sales manager for the Transmission Ball Bearing Company, Inc., with branch office at Greenville, S. C., had a very interesting operating exhibit of transmission methods which attracted much attention.

O. H. Johnson of Newberry, S. C., had charge of the exhibit of the Hockaday Company and explained the modern Hockaday system of finishing walls.

J. A. Johnston, president of the Stuebing Truck Com-

pany of Cincinnati, Ohio, was present in person at the exhibit of E. S. Player of Greenville, where the Stuebing truck was being shown.

The Screw Machine Products Corporation of Providence, R. I., had an exhibit of their select-o-phone in charge of H. P. Dixon, sales engineer.

J. R. Regnas of J. R. Regnas and Company reported the receipt of some very nice orders taken during show week. Mr. Regnas handles a complete line of shipping room supplies.

J. Kirk Rowell, of Louisville, Ky., the southern representative of the American Kron Scale Company, was present at his exhibit throughout the entire week. He announces the proposed removal of his office from Louisville to Atlanta.

H. G. Mayer of Charlotte, N. C., southern representative of the American Laundry Machinery Company and

J. FRANK CRAWFORD, THE BEAUTY OF THE DOUGLAS BUNCH.

other well know equipment manufacturers, was in attendance at the exhibit a part of the time.

Arthur W. Harris of Atlanta, Ga., the southern representative for the American Warp Drawing Machine Company of Boston, was present throughout the entire week.

Fred Forster of Atlanta, Ga., southern agent for the Draper Corporation, spent one day at the show shaking hands with his numerous friends. Other representatives of this company were present from time to time during the week.

W. P. Thompson, of the Textile Finishing Machinery Company, of Providence, R. I., visited the exposition for a day or two evincing much interest in what he saw there.

Dr. W. R. Catheart of the Corn Products Refining Company of New York City, had prepared as a souvenir for his mill friends a neat pocket-size book entitled "Sizing Hints." This book was provided with flexible leather covers and several blank pages in the back part suitably spaced for formulae and memoranda. Mill visitors at the Corn Products exhibit were presented with one of these handy reference books by one of the several representatives who were continuously present throughout the week.

F. W. Howe of Providence, R. I., was a visitor at the booth of the Crompton & Knowles Loom Works of Worcester, Mass., during a part of the week.

W. B. Sawyer, district sales manager for the Graton & Knight Mfg. Company of Worcester, Mass., was present at their exhibit during the entire week.

E. D. Roy of the Roy Specialty Company, Greenville, S. C., occupied space with the Greenville Iron Works and the Wilson Company who act as southern agents. Here was shown Roy's oil-less rocker-shaft bearings and also fibre textile specialties manufactured by the Keystone Fibre Company of Yorklyn, Del., of which the Wilson Company are southern agents.

W. A. Williams, southern representative for Wadsworth, Howland & Co., Inc., of 139-141 Federal Street, Boston, Mass., had charge of the exhibit of this company and was showing their Bay State brick and cement coating, "Dixielite," the well known mill white, and Bay State paints, varnishes, etc. Mr. Williams makes his headquarters at Greenville, S. C.

T. D. Futch, secretary-treasurer of the Columbus Truck & Supply Mfg. Co., of Columbus, Ga., was present at the exhibit of this company, where they were showing their patented "Cotrusco" roving cars and other specialties.

William Reynolds, lubricating assistant in the sales department of the Atlanta office of the Texas Company, was among those present during a part of the week.

James E. Phillips, representing the Atlanta branch of E. C. Atkins, Inc., of Indianapolis, Ind., and who had charge of the exhibit for this company, made himself very popular by distributing souvenirs in the form of miniature saws.

Otis Wright, vice-president of the Beckley Perforating Co., of Garwood, N. J., was explaining the products of his company at the exhibit of Wilson & Company who handle these products in the South. Among other things manufactured by the Beckley Perforating Company are special perforated metals for belt guards, machinery guards and similar products; also perforated linings for hydro-extractors.

Arthur Larkins, manager of the Manufacturers' Sales Department for the Sherwin-Williams Company of New-

GEORGE DOING A "FADEAWAY."

ark, N. J., was present at the Sherwin-Williams exhibit and meeting many textile men.

Hu E. Jackson was in charge of the exhibit of the McNaughton Mfg. Company of Maryville, Tenn. This company makes a specialty of boiler grates.

E. F. Houghton & Company, Philadelphia, Pa., was represented at the show by L. W. Cuddy, a member of the research staff.

Jas. D. Smith of the Charlotte, N. C., office of the

(*Continued on page* 536.)

KNITTING SECTION

The Attention of Manufacturers of

WOMEN'S HOSE

is invited to our new

Fashioned Welt Machine

MODEL K

This machine produces women's hose with an inturned knitted welt similar to that produced on full fashioned machines. The machine has all the features of our other models—each stocking being dropped from the machine complete, except for the looping of the toe. It is fitted with five yarn changing fingers, inserts an "anti-runback" course, and, the welt being knitted on the machine, has all the elasticity of the fabric and may be made as wide as desired.

Write for samples and further information

ESTABLISHED 1865

Scott & Williams,

INCORPORATED

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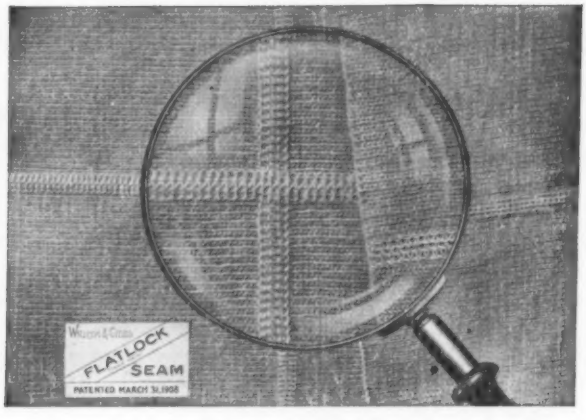
FLATLOCK

TRADE MARK REGISTERED U. S. PATENT OFFICE

"The Seam That Sells the Garment"



An absolutely flat seam.
A locked seam
A strong seam
An elastic seam
A thin seam
A friendly seam
An ornamental seam

(Illustration shows you its construction)

So many lines of knit underwear are being manufactured that the experienced buyer in picking the wheat from the chaff chooses a line that is made with the *Flatlock* Seam.

There must be a reason. The *Flatlock* Seam is the best Seam in the world because it has the points of superiority noted at the left.

The *Flatlock* Seam is a selling feature that manufacturer, wholesaler, jobber and retailer can use---one that the retail customer will appreciate if rightly emphasized.

We are proud of the *Flatlock* Seam and justly so, being sustained by the knowledge that nearly 300 manufacturers in the United States, Great Britain and Canada are using the *Flatlock* Seam in the manufacture of their trade-marked lines.

Unless you are already using *Flatlock* machines, you should investigate their merits.

WILLCOX & GIBBS SEWING MACHINE CO.

Trade Mark

Reg. U. S. Pat. Off.

HOME OFFICE: 658 BROADWAY, *Corner Bond Street*

NEW YORK

Willcox & Gibbs S. M. Co., Ltd., London, Paris, Brussels, Milan.

Canadian Representative: W. J. Westaway Co., 5 Sun Life Bldg., Hamilton, Ont.

Trade Mark

Reg. U. S. Pat. Off.

The Knit Goods Market

Buying of light weight underwear was given a tremendous lift with the dash of spring weather of early May, orders flowing in by mail and wire at a rate that leaves no doubt of the scarcity of this class of knitted goods in the hands of jobbers.

In the main the orders were for small lots—from one to three or four cases—all for quick delivery, in many instances expres shipments being called for. Factors look for continuous buying for the remainde of the season.

Hosiery is in better demand than for months past, and already it is apparent that supplies of full fashioned goods for ladies will be far short of requirements. Ladies mercerized are selling better than for some time, at varying prices, and full fashioned mercerized are no longer to be had from a few mills specializing in this line.

The market throughout, except in very low-price cotton goods, has taken a strong upward turn, and price advances are noted in the better type of goods.

A few weeks ago one frequently heard the question, "What's the matter with the hosiery trade?" There seems to be nothing the matter with the market now, unless it be from the viewpoint of not a few jobbers, who see in the spurt of business a likelihood that deliveries will be late and, probably, curtailed.

While recently the market was hunting buyers, now buyers are hunting the market. Several selling agents, particularly in some lines of sweaters and the more desirable lines of hosiery, have sold their mills up for the entire season, and actually are looking for manufacturers in position to accept business for immediate use as well as far into the fall. Fine lines of mercerized in particular are wanted by at least two selling agents. But no one appears to be worried about getting additional quantities of coarse socks and ladies' cotton stockings.

And now the not unexpected rebound in the knit goods market has come, and with it a situation threatening fresh perplexities for mill and distributor, but favoring the mill. Mid-May witnessed a complete transition from the stagnation that prevailed in the primary market for the first four months of the year.

A sudden spurt in buying developed almost over night, and caught all interests short. In many lines of hosiery, demand is as acute as during the latter weeks of fighting in France, and this necessarily is reflected in a deeper interest in sweaters and underwear for both spring and fall.

A number of mills have withdrawn their lines and selling agents and commission houses, whose mills are sold up so far as they are willing to go for the present, are looking for new sources of supply. The day of selling at prices that made the buyer feel he was participiating in a distribution of souvenirs is past, and for the first time since the signing of the armistice, manufacturers are looking forward to the operating of mills for reasons other than exercising the machinery.

Already, in many spots, merchandise is short of demand, precisely what was repeatedly predicted in these letters. Jobbers are in New York in greater numbers than for a long time, and nearly all show no little anxiety over the matter of getting what they will need for their requirements.

The situation is not without its danger spots. Manufacturers who had sold up to September and neglected to cover for yarns will not share in the profits that ought to accrue from the prices that jobbers now are willing to pay, unless they "fall down" on their contracts, as many did during the war. Mills in this predicament will have little compassion for their jobber customers who were allowed rebates during the decline or submitted cancellations. Their inclination will be make the most of the market, and much that has been bought will be delivered at prices above those named in the order or not delivered at all. Warrant for this is found, many interests say, in the happenings of the post-armistice days, when cancellations were as common as big orders are now.

While buyers were dozing the time away waiting for the lower prices that are not to come, and mills the country over were shut down or operating on half time or less, manufacturers were buying no yarn. They were waiting, too. Now they wish they had not lagged, for yarns are in the ascendency, and the penalty for the waiting will be advances that might have been averted.

Big operators, from the moment the jump in buying started have been watching every turn as closely as ever the stock market was watched by the cleverest exchange members in time of panic and sudden fluctuation. Spinners seemed to have sensed the leaping of the hurdle while neither manufacturer nor jobber was thinking of getting on the other side. So that when mills began to look around for yarn their buyers found precisely what jobbers found a few days later—prices moved up and some counts not to be had except for very distant delivery. Again, it is the belief of some mill operators, the spinners are in control after patient waiting.

New business in knit goods will be taken at new prices. Some of the cancelled orders will be reinstated at about the original price, if manufacturers see fit to favor a recalcitrant customer. Instances can be cited of this having been done already. An order for ladies' silk stockings sold to a New York jobber was cancelled by him during the first week in March. The mill permitted this to favor an old customer. In the second week the jobber was back, for reinstatement of the order, and put up the plea of the "old customer." The manufacturer's representative proposed to submit the matter to the mill. The jobber insisted that he have an immediate reply. He got it, when informed that the price had been advanced 75 cents a dozen. He demurred, but to no avail, and the incident was closed by the jobber increasing the order, at the new price. It cost him $750 for the cancellation.

Immediately the upward turn in the market appeared, notices from mills to their representatives to sell nothing more until further advised began to pour in, and instructions of this character have continued to spread dismay. A large southern mill making complete lines of cottons and silks wired: "Withdraw all lines and prices. Take no additional business until instructed. Mill sold up."

A firm of selling agents at 346 Broadway has withdrawn its line of misses' combed peeler finer than 300 needles, selling at $2.40 on 7s, rise and fall 7½ cents; misses' 2-pound carded, last sale at $1.30 on 7s, rise and fall five cents; misses' mercerized, last sale $3.25 on 7s, rise and fall five cents, and men's mercerized, which were selling at $2.25, and men's 176 needle cotton, last sale $1.05. A

combed peeler half hose, double sole and high spliced heel, is still being offered by this agency at $1.75, and is being resold by a few jobbers at something less.

Another selling establishment has sold two mills up in mercerized and artificial silk half hose, and is desirous of making a connection with mills which can guarantee deliveries of the better grades. "We can sell 10,000 dozens of these half hose if we can get them," says the head of the establishment.

Mercerized goods have been selling too near cost of production to make mill operation interesting, as has been shown by several accountants who recently have been giving much attention to the matter of cost ascertainment. Advances were due, even though yarns had remained where they were, with the market for yarn going steadily upward, increases greater than were contemplated now will be necessary. There is danger that this class will have to retire for the time as a fifty-cent retail proposition. This, in the estimation of dealers with a weakness for adhering to popular prices, would be a calamity, and manufacturers are striving to avert it. The situation is one that ought to make for a better market for combed peelers and lisles.

The middle of May found a much improved situation in silk, artificial silk and mercerized half hose. An artificial silk sold at $3.60 a dozen and a fibre plated on mercerized, at $3.75, are much wanted numbers. One of the very large silk mills making the three lines referred to has withdrawn all, after a period of brisk selling mostly by men on the road. Asked when the mill would name new prices, the management stated, "Not until we need business more than we need it now." This mill manufactures nothing coarser than 220 needle goods, or sells at less than fifty cents in retail stores. Its business in half hose was smaller relatively than in women's stockings. The mill is committed for no deliveries beyond June.

Half hose priced to sell under fifty cents retail do not appear to be in very great demand as a broad proposition. Women's mercerized, at $3.25 to $3.37½ are in a better position, especially for quick delivery. It is predicted a price of $3.62½ will shortly be announced by several mills —this for the mock fashion. There is a good movement in women's fibre stockings.

There have been developments in the underwear trade recently that are a surprise to a considerable number of jobbers. Several lines of 16-pound cotton union suits that had been selling down to $13.50 in competition with the production of a southern mill at $12.75 have been advanced to $14.50, and it is stated at least one mill is getting $15.

Eleven-pound shirts and drawers of some makes are commanding $8.25, one mill, it is understood, selling at a quarter better. These lines for a time were being offered down near $7.25, in competition with a manufacturer of clean waste yarn.

To some of the underwear mills business is coming so fast that already there is a question whether deliveries may not have to be made on the allotment basis. Mills selling both the jobbing and retail trade have felt the spurt.

Fall underwear is having a wartime boom, in some mills at least. One important Central West manufacturer shows reorders from a number of customers bringing their total purchases for the season up to a greater number of dozens than were taken in 1918. Additional business has been coming fast with this mill, and it is by no means an isolated exception, although its experience may not be that of the trade in general.

The selling management expresses some regret that, in justice to the mill's customers, they be warned that a rising market is imminent. "Why do you take that view?" was asked. The reply was, "Cotton has been advancing and is holding; yarns have been priced too low and spinners will advance as mills' needs become apparent, and, as a matter of fact, underwear for some time has not been selling at value."

With all interests talking price advancement, it was only a question of a little while before merchants would be paying more than the figures at which they can buy today.

A West Virginia jobber who is frank enough to admit his casting of the horiscope deceived him, went out a few weeks ago and sold to his retail customers an aggregate of sixty-five cases of 11-pound shirts and drawers. He had reasoned, with a number of now sadly disappointed distributors, that as prices had been declining they would not at any rate go higher, and neglected to cover. When he came to buy for what he sold he found the price had advanced—only 25 cents a dozen, but that was enough to diminish his prospective profits. To make good his paper loss he bought 100 cases of the underwear, at the new price, and, he says, has put 40 cases in stock, to be held for what he now feels assured, will be a higher market.

It seems a number of merchants did not take seriously the announcements of several mills that on a designated date their prices would be advanced, and they since have tried to get the benefit of the previous figures, usually paying the new price, however. A selling agent shows a letter from a customer enclosing an order for stockings, in which he says, "I know your mill has advanced ten cents a dozen, but I hope you will be able to get the order through at the old rate."

The agent did not. The mill stated that its announcement meant just what it said. In another instance a visiting buyer expressed amazement when quoted a price above what he expected to pay. "You received our letter of last week, didn't you?" asked the mill's New York representative, "Yes," said the customer, "but I thought it would be all right for me to wait a few days. Besides I thought you were just trying to scare your customers into buying."

The customer was assured the day when it was necessary to resort to scare announcement had passed; that the higher prices which were being named would stick. This is coming to be generally accepted, and many buyers who are operating have been influenced by the knowledge that it is the first comers who will get the picking.

Men's balbriggan underwear is one mill product that still is selling at bargain prices. Merchants are getting these garments at $3.50, and as low, in some instances, as $3.37½ for sub-standard goods. Bals have been named so low for such a long time that it is assumed all the shrewd merchants have covered for their requirements. If they have not, they ought to be made to pay an arbitrary price as a penalty for procrastinating.

Some of the distributors who simply tag along, not aware of what powerful rivals are doing, have yet to buy, and there is a possibility of future business in bals at more nearly adequate prices. It is suspected by some interests that not a few of the larger houses bought low-price bals speculatively and will resell during the season under later mill prices.

Full fashioned silks are by all odds the best performers in the race for knit goods supremacy. Some of the leading mills are allotting to customers who showed a cantankerous disposition during the cancelitis epidemic, and newcomers to these mills simply can do no better than get on the waiting list. "I am ready to talk business," say waiting buyers. "We are not," is the usual reply of sales managers.

Buyers are taking what little they can get and are glad to get that little. A retail merchant called on four jobbers in quest of a line selling at $24 a dozen. Not one could let him have a dozen. Stocks of the more popular fashioned silks are very low and jobbers are alarmed at the prospect of being unable to replenish. Buying is far more active than last year when purchases for spring were being made, and merchants having placed orders are rushing specifications and shipping instructions.

With silk near the high record price, advances in most lines of fashioned goods are contemplated. Mills selling to September probably will announce higher prices for a part of the present season. In fact, a line selling at $16.50 is likely to go to $18 shortly.

A mill selling the retail trade has withdrawn its full fashioned silks, recalling salesmen from the road. One mill opened and closed in a week, and another, which has been selling for less than two weeks, ought to shut down selling, say the executives.

Some interests see in the notice of the Viscose company to mills and jobbers in silk a likelihood that artificial silk will maintain a price governed largely by the market for tram, which is equivalent to saying that both fibres are destined to remain at a high level for some time.

Manufacturers owning artificial silk for some weeks have been able to profit more by selling their holdings than making it up into the finished fabric, and for them the market quiet was opportune. The fibre went soaring until it got away from the manufacturers. There seemed a danger that it would reach a price level that would tend to curtail its use for hosiery purposes. Now, it seems, the runaway fibre market is to be checked by drastic measures adopted by the controlling interests.

A mill making women's artificial silk plaited on tram is sold up to July, to the regret of the management, for it is evident better prices will be obtainable than prevailed in the last few months.

South America is wanting artificial silks, having cancelled so many orders during the immediate post-armistice days. It may develop that what was rejected would have cost the merchants down there less than that which they will have to buy to fill the vacuum.

Something appears to have started in wool socks. In the last week or two several buyers have been nosing about the market in a way to indicate an interest in odd lots. It may be a coincidence that while these inquiries were interesting holders a well known mill circulated an announcement that its prices of wool socks would be withdrawn May 1.

In several quarters there is a strong belief that wool socks will be worth very much more several months hence, and some holders are shaping their campaign for a rising market.

Ladies' worsted stockings, for some time popular as a sports wear article, are attracting considerable attention, and it is the opinion that these stockings, in heather and oxford mixtures, are destined to be in great demand. The high price makes them attractive to women who have a weakness for the exclusive, and the trend toward low shoes in the winter months affords the best of reasons why women's worsted stockings, in Richelieu stitch and with minor features might be expected to prove good sellers.

Keen interest in ladies' clocked stockings is developing, and while a number of manufacturers are turning attention to this form of ornamental work, others, fearing it will be overdone, are disposed to see it tried out in mills equipped for clocking. With the growing demand for clocked stockings, there has been no little experimenting with devices for sewing the clock to the stocking. At least three machine builders say they have such machines in process, and the device of one is understood to be in practical operation in several factories. Inquiries as to when deliveries of the clocking machines might be expected have been met with the response that there already were more machines on order than could be completed in the next few months. Machine builders themselves express the belief that clocked stockings soon will be as common as the seam in the mock fashioned. Nevertheless, there is just now a demand for clocks, and manufacturers in position to meet it probably will take the cream off this class of business well before it shall have undergone what happened to the overdone automatic top half hose ventures.

A very large department store operating in at least two eastern cities is advertising a fine silk stocking with triple-cord clocks at four dollars a pair. If the embroidering were done by hand it ought to be possible to obtain either of several very good lines at $25.50 or below. A fashioned stocking made in Brooklyn is going to jobbers at $19.50, and, it is stated, hand embroidering can be had for six dollars per dozen. Full fashioned ingrains from a large eastern mill are being sold to wholesale distributors at $16. Two mills specializing in lace effect on full fashioned goods for women are selling at and around $26 to $28, prices having been advanced two dollars per dozen quite recently.

A manufacturer in eastern Pennsylvania whose product formerly was of the cheaper types, has turned a great part of his mill over to the manufacture of high grade seamless silks for women, and is meeting with encouragement beyond his fondest expectations. His line of 14-thread 24-inch boot stockings has been having a very large sale. The stocking is seamless, made with shaped ankle, has mercerized top, and is understood to be going to jobbers at around $10.50.

Full fashioned stockings for ladies made in a number of Pennsylvania mills which a few weeks ago were sold to jobbers at $13.50 have been advanced to $15. The increase represents the contribution which wearers of silk stockings will make to the enormous advances granted to employees, who also will work fewer hours than rationally.

A line of ladies 176 needle mercerized stockings is being sold direct by manufacturer to retailer at $2.25, and is in strong demand. This mill finds retailers, generally, "hungry for merchandise."

A similar stocking is being produced by a mill in Pennsylvania which has but gotten in operation, with 35 machines. Samples were turned off several weeks ago, and since then the mill has been sold up to September.

A full fashioned mill is taking very large orders for ladies' and is promising no deliveries before October.

Another mill is sold up for the year with its full fashioned mercerized, made from 60s 2-ply, which go to job-

bers around $6.75. There is every reson to believe that the tightened condition in full fashioned will create a profitable opening for seamless mercerized and silks down to the less expensive types, for which most jobbers appear to believe there is no pressing demand at present.

For getting his organization together for the bigger business that is in the making, and meanwhile establishing a reputation for his product, is the explanation of a manufacturer of 176 needle half hose for selling to jobbers at one dollar per dozen, f. o. b. mill, subject to a discount of two per cent. At a net price of 98 cents, this manufacturer says the chances of breaking even are against him, notwithstanding his low cost of operation. He has been taking considerable business from New York jobbers, and this means he has been selling in about the lowest market between the Atlantic and Pacific. The socks have looped toe and transfer top, and are made from 18s single, body, and 13s top, 30s being used for splicing.

This manufacturer says he is shaping his campaign for a rising market, that in a few weeks, he believes, there will be as strong a demand relatively for low-end stockings as there is now for the better types. Several jobbers who, it is known, carry normally from 100 to 1,500 cases of low-end stockings now have less than fifteen cases in their warehouses.

A buyer shows a letter from a manufacturer of 176 needle socks at 80 cents. These, however, are not standard, by any means, and are regarded as distressed goods. There can be no other deduction, for at that price the manufacturer must be taking a loss of more cents per dozen than he ever had or will get in profit.

Women's 176 needle stockings do not appear to be an attractive proposition, and hosiery of this class probably is in sufficient supply to take care of needs for some time to come. All of which may be attributed to woman's more exalted ideas as to the stockings she ought to wear.

The extraordinary demand for fine hosiery, more particularly silks and the better grades of mercerized, and the lack of interest in low-end stockings, half hose especially, has led some interests to inquire whether there ever will be a worth while market for the cheaper cotton socks.

In view of the variations in prices of some of the latter, a questionnaire was sent to a number of Pennsylvania manufacturers of 144 needle half hose. Replies which were received bore evidence of a very great price discrepancy. A mill making 17-ounce full seamless, from 12s yarn, reports the price to jobbers $1.20. A 16-ounce similar sock is priced by another mill at 85 cents.

From another mill, making 18-ounce socks, 14-inch boot, using 10s and 12s yarn, comes a quotation of 97½ cents for sewed toe. The one price reported measuring up approximately to value was $1.25, but the return on this sock was not accompanied by a description. One mill made a sale very recently at $1.28, on a grade said to be similar in all respects to that sold at $1.25.

The subject was discussed at a meeting of manufacturers in Reading recently, when a jobber present stated that while he would buy all 144 needle socks at 90 cents that he "could lay hands on," he admitted that when he was no longer able to get them at that figure he would be willing to pay more.

"When I cannot buy at 95 cents," he added, "I would be glad to pay $1.00," and thus he went up the line, making it clear that his establishment was finding an outlet for 144 needle socks.

Three manufacturers admitted they were taking no business at their prices—$1.25 to $1.35—and declared with no little emphasis that they would not accept an order for a dozen under those figures. It was the prevailing thought that 144 needle half hose soon will come into their own.

Among some interests there seems to be doubt whether the activity which marked the first half of May will be permanent. For this reason there will be a hesitancy on the part of some manufacturers to make commitments for yarns in advance of actual sales. This would seem to threaten fresh complications for buyers. A retrospect appears to warrant the prediction that buying will be in large volume for some time.

In October last, it will be recalled, many jobbers were wiring for repeat orders for underwear for immediate delivery, indicating that they had little stock. Following the memorable November days nearly every past due delivery was cancelled. Wholesale buying since then has not been in large quantity. Meanwhile retailers were cleaning up their stocks of high-priced goods, and it therefore would appear their shelves are not crowded. That this is the condition seems to be borne out by the very acute demand for right-away deliveries of spring garments and a deep interest in heavy weights. All circumstances point to the conclusion that the market will gather strength rather than suffer the slightest recession, this observation applying not to low-end cotton half hose and women's stockings, although in these lines there is reported some show of improvement.

Practically every manufacturer may be assumed to have taken his loss on his high-price yarn and charged off the shrinkage, and it is reasonable to suppose that most of the distressed hosiery has gone into consumption. This view obtains among some of the jobbers who have been spending the May days in New York.

Among these visitors were two from San Francisco, both of whom report what they describe as phenomenal business among retailers on the Pacific slope. The jobbing business suffered a set-back in the California metropolis through the price war that was maintained for some time by overall manufacturers. They had been selling at $31 a dozen. For some weeks they kept printers busy on reduction announcements, until the price had been battered down to $21.50. This served to unsettle wholesale business locally for a time, but May brought a material improvement.

Another buyer came from a North Carolina jobbing house which conducts a chain of retail stores in North Carolina and Virginia and jobs in several of the states to the South. The retail business for the first four months of the year, this buyer says, showed an increase of 50 per cent overthe corresponding period for 1918, while the wholesale end gained about 25 per cent.

Among office executives who are kept informed by road salesmen the belief is strong that the remainder of the year will witness a very large retail business. It is noteworthy, according to reports received by one such establishment, that in underwear, as in hosiery, the consumer is little interested in the lower priced goods. Five years ago, it is stated, not five per cent of the average retail store's business in men's union suits was in garments valued at $2.50 and over. Today a small fraction of the business is in the low-price lines of pre-war days.

Pennsylvania Knitters Meet at Reading

The need for systematic intensive training of mill help was shown in an address and the discussions which followed, at a meeting of Pennsylvania knitting manufacturers at the Wyomissing Club, in Reading, on May 10. With a department equipped for giving such training, it was made apparent, employers would be less at the mercy of the trade union which impose restrictions as to production and the number of apprentices that may be employed.

The address was by William Brown, a field superintendent of the United States Training Service of the U. S. Department of Labor, who stated incidentally, during his talk, that the matter of industrial training had been urged by Samuel Gompers, president of the American Federation of Labor.

The training that carries technical knowledge of a given vocation in the best way and the shortest possible time is the training desired, said Mr. Brown, who contended that under intensive training a beginner could be taught more of practical use in one year than ordinarily is learned by an apprentice in four years. The apprentice, it was pointed out, may learn how a given piece of work or operation may be performed in perhaps twenty ways, neither of which might be the right way. For illustration, Mr. Brown stated that he had served an apprenticeship as a machinist, yet when it came to grinding a lathe tool he did not know how to do it. Each of a number of full-fledged machinists told him as many different ways for doing it and neither told him the best way.

For showing what may be achieved by systematic intensive training, Mr. Brown cited the experience of a metal working establishment that during the war employed 6,000 persons, which was short of the number required for turning out work as fast as the government wanted deliveries. An investigation disclosed a sad lack of system and indulgence in slipshod methods to an extent that was deplorable. Training under the plan being pursued by the Labor Department service was put into effect, with the result, it was stated, that in a very short time the production was increased from 5,000 units per day to 70,000. "These figures sound incredible," the speaker said, "but they can be verified."

Mr. Brown differentiated between vocational and industrial training, stating that the former trains for a vocation, while the latter trains in the vocation, "and that is where you want training," he continued.

That this is coming to be more generally recognized, he said, is shown by the fewer apprentices. Training, he urged, brings out the better qualities in labor, in that it improves efficiency, and it assures maximum production. It was found in reference to a given commodity, he said, that while help in England received but one-half the wage paid in the United States, England could not compete with this country in the matter of price. Upon investigation it was disclosed that the British factory employees turned off less than one-half of the production in the same number of hours as in factories in this country. This was cited as one of the revelations which showed the importance of industrial training, which would bring about a better morale among employees.

It was not the province of Mr. Brown to point out just how intensive training ought to be conducted, and it was admitted little progress had been made in textiles. His injunction was, "Establish a training department; set aside a number of machines, if necessary, for educating the employee in his or her line of work. Make of him or her a better employee in all respects, and you will have given bolshevism and anarchy their death blow. If your employees are not leaders, leaders will appear among them. I would recommend a policy of promotion, instead of going out of your factory for a person to fill a vacancy. With training installed in your factory you will have a skilled operative for the place. If you do not promote, you may lose two employees—the one who is quitting his or her work, and he or she who was not promoted."

Some manufacturers, Mr. Brown said, raised the objection of expense or additional cost to the installation of a training system. "'You do not begin to know what it is costing you because of not having training in your factory. You would be amazed, after training your employees, to find how much you might have saved had you begun earlier. It is a species of instruction that pays for itself and leaves a margin, besides making better men and women of your employees."

That it was felt by several persons in the audience that Mr. Brown had gotten dangerously near to stepping on the toes of the union was indicated in the character of several questions put to him at the conclusion of his interesting address, which was received with rapt attention. "Is it not true," he was asked, "that unionism is responsible for the fact that there are fewer apprentices, the union having restricted the number that may be employed in a union shop?"

It was admitted this was lamentably true, but, it was held, the effect of this restriction may be overcome by intensive systematic training.

"What would you suggest when the union restricts employees' production per day?" was asked of Mr. Brown. He confessed this was a puzzling question, and it went unanswered. He thought it could be met, however, by improving the morale of the factory, and he felt organized labor would not antagonize industrial training, since a very important labor organization has memorialized congress for the continuance of the Labor Department training service.

Admitting the force of all that Mr. Brown had said in behalf of training, it was brought out as the thought of leading manufacturers present that the better production and the higher degree of efficiency characterize the open shop, and nothing in rebuttal to this proposal was offered. The open shop, declared one manufacturer, is necessary to the survival of industry in the United States.

Even the open shop fails as a remedy for the indifference and arrogance of much of the mill help, in these days of princely wages, it is held by some employers, one of whom referred to conditions in his knitting mill as supporting this view. "Very few of our women and girls will work Saturday forenoons," he said.

"I would suppose," suggested an inquirer, "that with the cost of living so high as to evoke general complaint there would be a disposition to work as many hours as possible, for bringing the weekly earnings up to the maximum."

"You see," replied the manufacturer, "when you talk

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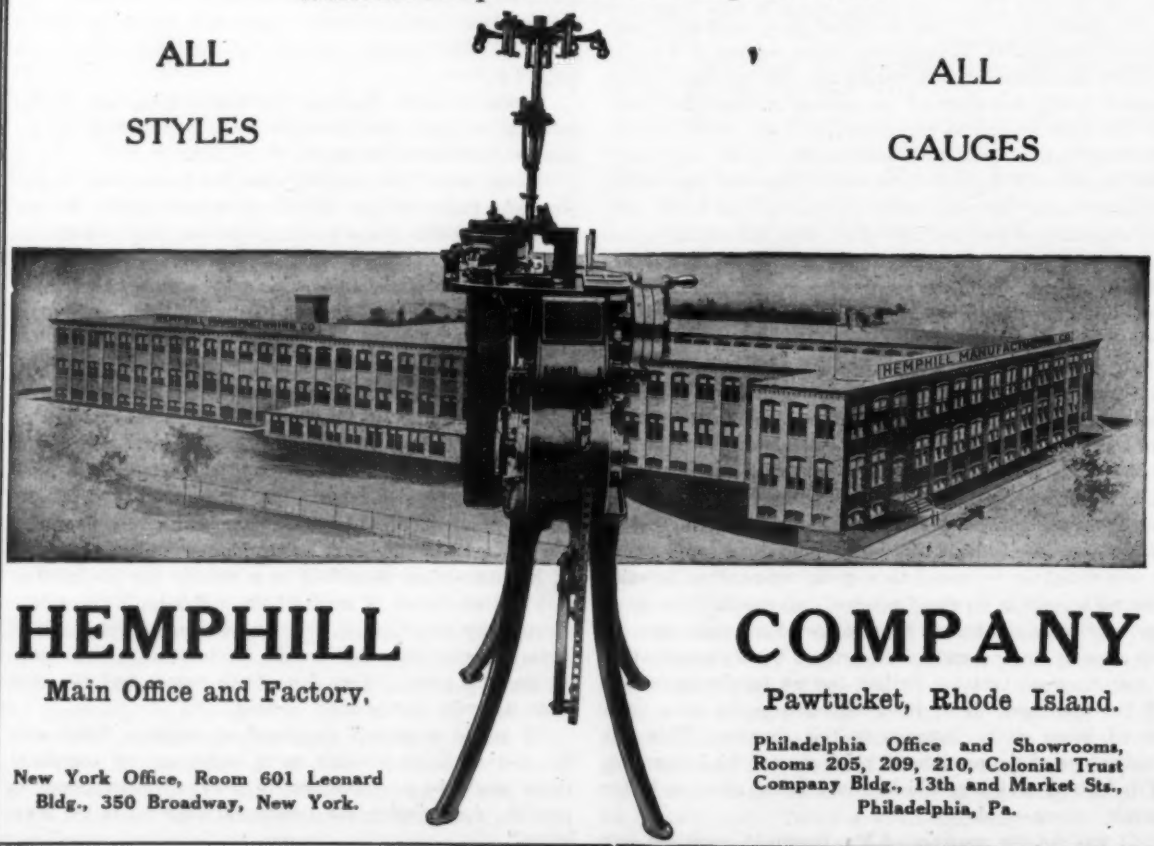

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to our help that way they simply tell you they are earning so much in five days that they can afford to lay off on the sixth. They are simply increasing the cost of what we make, by doing as they are, and as this is going on in probably every factory, you can see why the cost of everything you must buy remains so high. If labor does not soon get rid of its exalted notions prices will be still higher, and the blame must rest on labor and those responsible for toadying to labor—you can guess why."

Union labor in Reading recently was given a lesson that may prove as valuable as intensive training. Six hundred or more quit their work without cause, simply to observe May 1 as a day when, labor appears to believe, it can do with employers as it pleases. All were notified that if they did not return to work on the morning of May 1 their jobs would not be open to them. All are locked out, notwithstanding several strikes in other industries to enforce acceptance of their return, and it is understood they will have to look elsewhere for employment if they want work this year.

A brief reference to the laws of several states in relation to sales was presented in a paper prepared by Robert J. Byron, of counsel for the National Association of Hosiery and Underwear Manufacturers. The purpose was to enable manufacturers to surround contracts with buyers with a greater measure of safety than has prevailed.

The Pennsylvania uniform sales act of 1915, P. L. 543 (which became effective January 1, 1916 and is applicable to contracts made after that date), by section 4 provides:

"A contract to sell or a sale of any goods of the value of five hundred dollars or upwards shall not be enforceable by action unless (1) the buyer shall accept part of the goods so contracted to be sold or sold, and actually receive the same, or (2) give something in earnest to bind the contract, or in part payment, or (3) unless some note or memorandum in writing of the contract or sale be signed by the party to be charged to his agent in that behalf.

"The provisions of this section apply to every such contract or sale, notwithstanding that the goods may be intended to be delivered at some future time, or may not at the time of such contract or sale be actually made, procured, or provided, or fit or ready for delivery, or some act may be requisite for the making or completing thereof, or rendering the same fit for delivery; but if the goods are to be manufactured by the seller especially for the buyer and are not suitable for sale to others in the ordinary course of the seller's business, the provisions of this section shall not apply.

There is an acceptance of goods within the meaning of this section when the buyer, either before or after delivery of the goods, or any part thereof, expresses by words or conduct his assent to becoming the owner of those specific goods."

Most of the states have adopted the uniform sales act, but there is great variety in the amount fixed, ranging from no amount at all to $2,500.

The decisions of the states vary as to whether the agreement must be signed in the handwriting of the party contracting; and if so, whether the signature must be at the end.

It is always safer to have the contract actually signed at the end regardless of the necessity for signature at all, in order to avoid misunderstanding and a dispute about terms.

Section 64 of the act provides:

"Where the buyer wrongfully neglects or refuses to accept and pay for the goods, the seller may maintain an action against him for damages of non-acceptance.

"The measure of damages is the estimated loss directly and naturally resulting, in the ordinary course of events, from the buyer's breach of contract.

"Where there is an available market for the goods in question, the measure of damage is, in the absence of special circumstances showing proximate damage of a great amount, the difference between the contract price and the market or current price at the time or times when the goods ought to have been accepted, or, if no time was fixed for acceptance, then at the time of the refusal to accept.

"If, while labor or expense of material amount are necessary on the part of the seller to enable him to fulfill his obligations under the contract to sell or the sale, the buyer repudiates the contract or the sale, or notifies the seller to proceed no further therewith, the buyer shall be liable to the seller for no greater damages than the seller would have suffered if he did nothing towards carrying out the contract or the sale after receiving notice of the buyer's repudiation or countermand. The profit the seller would have made if the contract or the sale had been fully performed shall be allowed for in estimating such damages.

"It is important that the shipper act upon this rule by not shipping the goods after cancellation, as otherwise before he receives their return there may be a slump in the market which he cannot compel his purchaser to bear."

This rule protects both parties, because the seller secures the market price from his new customer plus the difference between that price and the price fixed by contract with the first customer, thereby recovering the entire contract price, and the buyer is not forced to accept goods which he does not want.

Scouring and Fulling of Knitted Fabrics.

BY WILLIAM DAVIS, M. A.

The system of scouring and fulling adopted for knitted goods depends on the character of the goods to be dealt with. Different methods have to be taken according to the material, all wool goods require different treatment from cotton or mixed fabrics and articles made separate from each other require different treatment to fabric made in the bulk and in long lengths for the cut-up trade.

In the case of woolen knit fabrics we have two well-defined systems of scouring and fulling which it is important that the manufacturer should be fully cognizant of. Makers of knit goods frequently have both branches of the trade carried on under the same roof, for example the full-fashioned branch may have been established first, but they may have added the cut-up branch of the trade subsequently. Their machines for scouring and and fulling have therefore been installed with the object of overtaking the trade in separate garments and with the introduction of the cut branch they may still retain the full-fashioned methods of fulling and scouring. If the manufacturer has only a small section of "cut" trade then he will be justified in keeping to the methods of treatment adopted for dealing with separate garments. If on the other hand the cut

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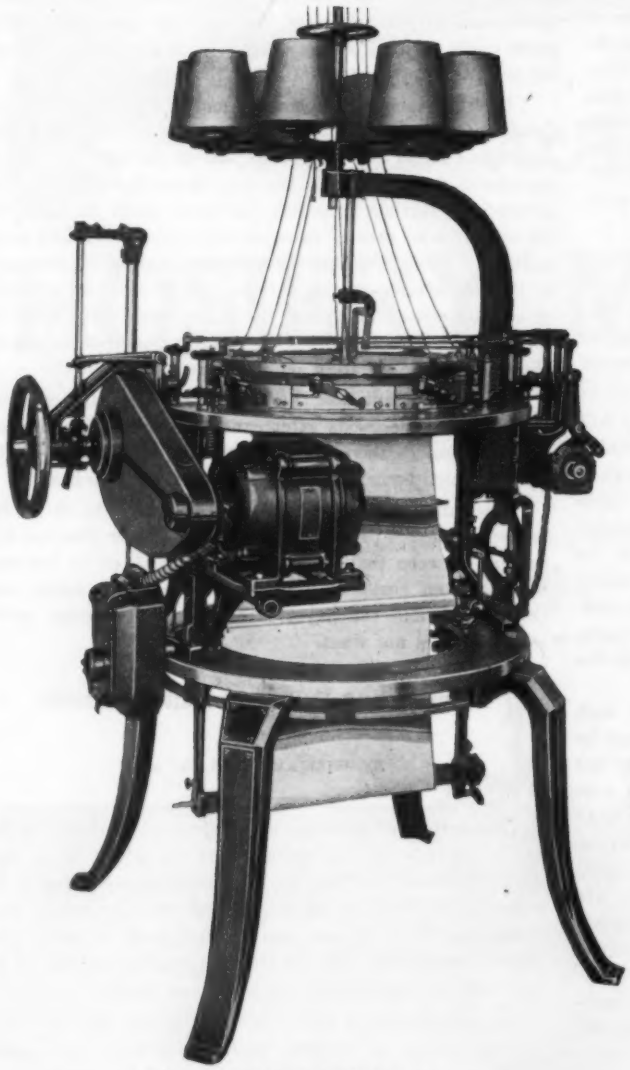

Drive on Bathing Suit Machine
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Look this drive over, and then go out in your knitting room and form a mental picture of how it would look if all the machines were equipped with Individual Motors. Dangerous belts and unsightly line shafts done away with, bettering the light and adding to the convenience of the knitting department.

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trade is assuming important dimensions, the merits of the different systems should be clearly brought to his notice.

Figure 1 is an illustration of a popular type of machine for scouring all kinds of knit goods made in separate garments and is used where scouring only is required, that is only when it is necessary to remove dirt and impurities from the garments. The prevailing principle of this machine may be learned from an examination of its chief features which are evident from the illustration. The washing boxes marked E are seen to be oblong in shape and stoutly constructed of strong wood and in this the scouring liquor is placed to a quantity suitable to allow for the splashing of the liquor. In each washing tub work three hammers marked H and it is from these that the scouring action proceeds. They receive their motion from the levers marked K which are fulcrumed at their centre points and made to swing round from the pulley B on the right

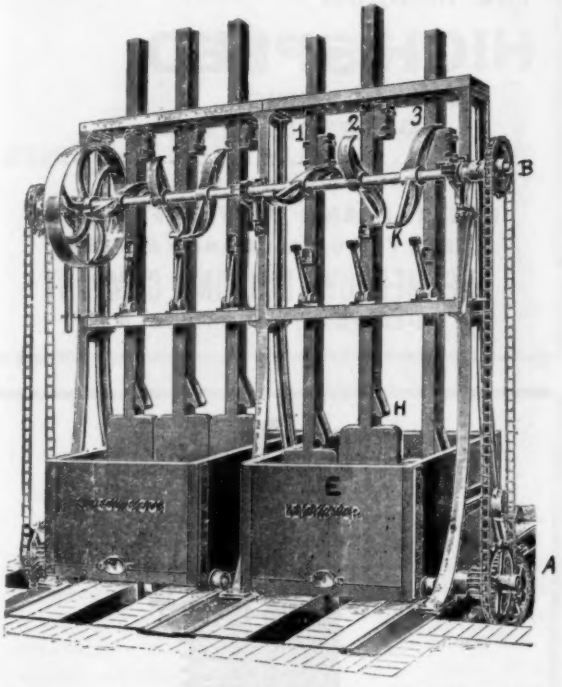

FIG. 1. SCOURING MACHINE FOR FULL FASHIONED AND SEAMLESS KNIT GOODS.

which receives its motions by means of a chain on the shaft situated at A. It should be noted that the levers K are keyed on to the shaft in different positions and that their action is to lift the hammers H at different times, the hammers falling down on to the goods by their own weight when the levers K release their hold on the hammers.

The right hand washing box has three hammers worked by levers 1, 2 and 3 which may be observed to be in different positions in relation to each other, lever 1 is in the act of pushing its hammer from the lowest position, where it is in direct contact with the goods, hammer 2 is seen in its highest position where it has just been released from the lever and is therefore about to fall into the box and on to the goods. Hammer 3 is noted to be in the farthest down position in the tub where it will shortly be engaged by the lifting action of the lever 3. By this means we have the falling action of the hammers timed to drop on to the goods at regular intervals, which does much towards securing uniformity of action and evenness of result. This falling action of the hammers is accompanied by a slow backward and forward movement of the washing boxes which has the effect of bringing a fresh portion of the material under the action of the hammers; the hammers themselves being so regulated that they always fall through the same space vertically so that the position of the goods relative to the hammer is altered by the to and fro motion.

This machine is especially designed for scouring stockings, shirts, pants, and other knit goods made in separate pieces, and is largely used by makers in the seamless and full-fsahioned branches of the trade. The tubs travel slowly backwards and forwards by means of a rack and pinion cog wheel so that a new portion of the material is always presented to the action of the hammers. Before treating full-fashioned articles in this machine it is usual to stitch different lots of garments together and turn the goods so that the hammers act on the wrong side of the fabric, thus preserving the face from damage. Garments having projecting pieces should be fastened down so that the hammers may always strike them on the flat. One of the best examples known of this is a part of the back of union garments known as the overlap, if this is not stitched down to the garment, it will soon be felted into a solid piece.

Outstanding features of a full-fashioned underwear factory are the disagreements which arise between the chief mechanic and the manager owing to discrepancies of sizes in the individual garments. Thus it is common to have such curious differences as one leg an inch or so shorter than the other or a similar difference in the length of the sleeves, although the pieces concerned may have been worked on the same frame under exactly the same conditions. Such differences are often attributed to the frame worker or the overseer responsible for making out working instructions. A much more likely explanation of the deficiency is to say that one leg of the pant remained stationary in the same part of the tub and received special attention of a hammer descending on it a large number of times in succession. This can easily occur for although the movement of the tub is designed to spread the action of the hammers equally over all the goods, these often work themselves into a tangle in the liquor and in this condition receive special individual attention from the hammers.

FULLING MILL FOR FASHIONED GOODS.

Figure 2 gives an illustration of a type of machine extensively used by the best makers of full-fashioned knitted goods made from pure wool or cotton and wool mixed where it is required to full them into their normal size. Fulling has of late received greater attention at the hands of knit goods manufacturers because of the agitation against garments shrinking in the wash when in the hands of the wearer. Manufacturers find that one precaution against excessive felting is to take up as much of the property as is feasible by a vigorous fulling operation and make the garments of a rather larger size to allow for this contraction. In this machine we have two hammers which work alternately against the goods. The hammers are marked H 1 and H 2 in the figure and may be noted to receive their alternate action from the arms of the crank shaft, A working hammer 1 and B operating hammer 2, and they are so keyed to the shaft that when one hammer is at the commencement of its stroke, the other has completed its stroke. They act in a horizontal direction slight-

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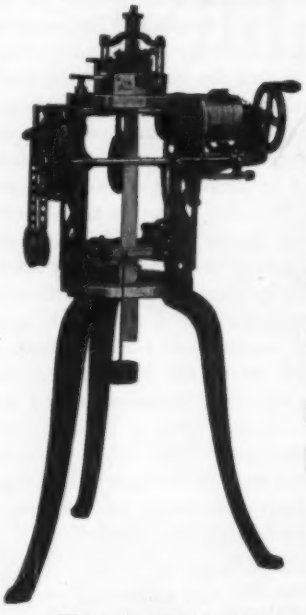

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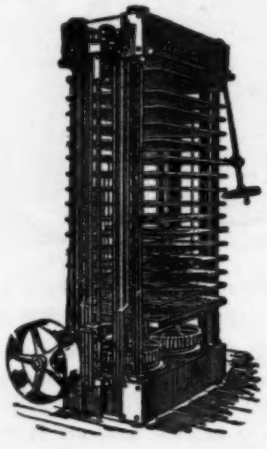

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ly in the arc of a circle and bring pressure to bear on the goods by striking them against the wall of the fulling tub.

For woolen goods the liquor is made up with a mixture of soap and mild alkali and the goods are given a period of treatment which corresponds to the dimensions required. It is better to full rather lightly at first and test the dimensions by measurement than guess at the result, for we can always increase the effect with a little longer treatment. Here again the machine is subject to the disadvantage that we have but little control over the rate and direction of shrinkage whilst with so many garments we have constant defects in the lengths of separate portions owing

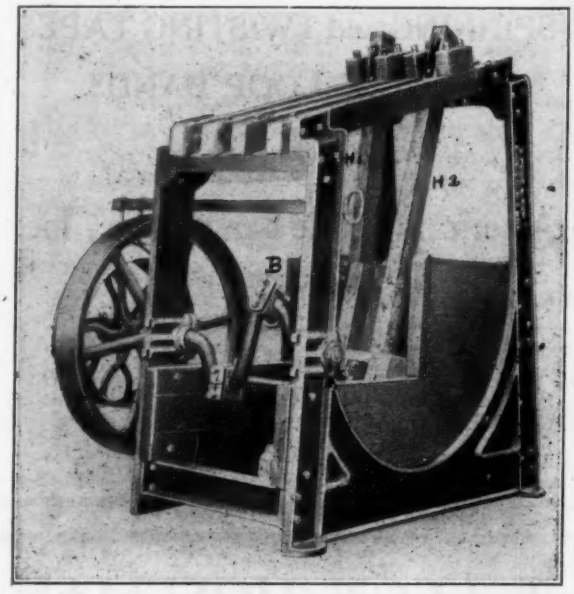


FIG. 2. FULLING MACHINE FOR FULL FASHIONED KNIT GOODS.

to the articles working themselves into entanglement in the machine. Of course much of this can be obviated by a skilful operator whose work it is to see that the goods receive free circulation in the scouring liquor and thus equality of treatment. This worker or fuller, if he is skilled, can learn the different classes of fabrics and after careful observation and experience may arrive at a pretty accurate estimate of the time required to produce the desired contraction whilst he can also gauge of the success of the operation by the feel.

This process gives woolen and cotton and wool goods a soft, full handle much in demand by the wearer and has a great advantage in that as a rule both scouring and fulling can be performed at one and the same time. If goods are first scoured and afterwards fulled to take up the latent felting property, this means greatly increased expense in the costs of finishing the goods, and when they are both performed in one operation as in this case we have a considerable saving effected. The real idea of scouring first and fulling afterwards is to have the dirt removed to a large extent before fulling is performed.

For very dirty goods there is much to be said for separate treatment because fulling alone might have the effect of seating certain impurities and foreign matter more firmly in the goods. Scouring is a gentler process than fulling and has for its primary object the removal of all impurities. Fulling is more vigorous, and whilst it removes the dirt by its action, yet its real object is to take advantage of the felting property of the garments to make them more compact and abolish the rawness of the knitted loops. One disadvantage of this type of fulling machine is that the hammers throw out considerable quantities of soapy liquor on to the floor which for this reason has to be specially constructed of stone, whilst the operator has to wear specially large, heavy wooden shoes to keep his feet dry. In these days of high soap prices this loss of scouring liquor, although a portion is collected and is run back again, is suggestive of careless and slipshod methods. We have the loss of valuable scouring or fulling liquor, and the danger of wet feet is a continual menace to the health of the worker. There is also much to be said in favor of a machine fully enclosed because there is no loss of liquor due to evaporation such as is the case in the open fulling machine which necessitates frequent renewal of the water in the liquor.

PRACTICE FOR KNITTED WEBBING.

The methods described are widely used by makers of knitted fabrics who fashion their goods to the shape or style of the wearer. For the cut trade, however, quite dif-

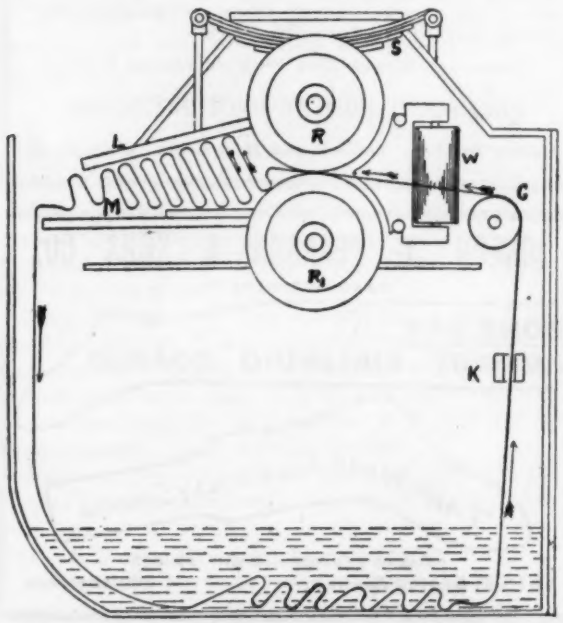
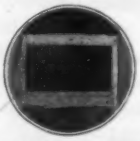


FIG. 3. SCOURING AND FULLING MACHINE FOR KNIT GOODS WEBBING.

ferent methods of scouring and fulling should be adopted as soon as the dimensions of the factory warrant such a step. The manufacturer of fashioned garments is very reluctant to introduce two systems of scouring into his works, but if he has to reduce his cost of finishing to a scale absolutely necessary for this branch of the business, he will require to introduce methods adapted to the trade. Figure 3 gives a view of a very efficient machine known as the "Kilburn" mill made by a firm of the same name in Leeds but which can be supplied quite efficiently by most firms of finishing machine makers. The sketch is supplied through the courtesy of the firm mentioned and the

PARAMOUNT METHOD FABRIC HOLDER

Results obtained with and without the use of the Fabric Holder.



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C. B. BIDWELL, C. P. A., Resident Vice-President

principle of work may be understood by an examination of its chief functional parts.

The fabric is treated in long lengths such as are produced in circular knitting machines of the usual type and this machine has a capacity for dealing with material to the weight of 150 pounds. The fabric is made into an endless band by sewing the two ends together and this band runs through the machine for treatment, the usual period being from 30 to 40 minutes. The diagram shows quite clearly a side view of the chief parts, prominent amongst which are the upper and lower squeezing rollers marked R and R 1. The fabric is drawn through the liquor by means of these rollers which pull the fabric through in a direction opposite to the hands of a watch. The outstanding feature of this machine is the direct control exercised over the contraction of the fabric both in length and in width. The contraction in length is effected by means of the fulling box marked M with its lid or cover L. This lid is connected to a device shown by the springs S which can be regulated so as to increase the pressure or diminish the pressure of the lid as required.

When the roll of cloth passes into the fulling box it becomes cuttled up to the point where the pressure of the material forces the fabric to lift the lid so as to emerge from the box. By this means steady pressure is exerted in the direction of the length which induces shrinkage of the woolen material, further we have a means of increasing this pressure and also the amount of contraction by regulating the weight of the springs S. Likewise the squeezing rollers R can be brought nearer or taken further apart according to the adjustment of the gearing, this being necessary to accommodate efficiently textures of varying thicknesses according to the gauge of the fabric.

The other feature of particular note is the device for exerting pressure in the width so as to cause contraction in this direction and this device is shown by the letters W which consists of a pair of rollers placed vertically in the machine and through which the fabric passes on its way to the fulling box. These two rollers are so adjusted as to exert pressure on the fabric in the direction of the width and the degree of pressure can be exactly regulated by an external screw adjustment. Thus if it is found after a period of fulling that the width has not contracted sufficiently, then the rollers would be brought closer together by adjustment of the screw. These two features, the fulling box for regulating contraction in length, and the rolls for regulating the contraction in width, form the most valuable points of this machine over the others mentioned in this connection.

The machine can be so regulated as to cause a definite contraction either way and the extent of contraction can also be influenced by the strength of the scouring liquor and the length of time in treatment. The operator can take out the fabric for measurement if he wishes to know whether the process has proceeded far enough. One deficiency should be mentioned and that is the tendency to develop what is termed "fulling marks" in the roll or web under treatment due to the fact that in passing through the rollers under pressure so many times in succession, the fabric sometimes runs in certain grooves which, with continued pressure, leaves marks in the fabric known as "fulling marks." To eliminate these it may be advisable to reverse the direction of the roll of fabric making it run "end first" during the second period of treatment. In this way these creases will be opened out and the fabric become more regular in appearance.

In such a length of fabric passing through the machine at the rate of 100 yards per minute, there is a tendency for the material to become locked and form itself into knots which would develop grave defects in the cloth. As a safeguard we have a piece K which is adjusted to let pass only fabric of normal thickness and when the fabric falls into entanglements, the machine is knocked out of action until the obstruction is rectified. The scouring liquor is shown dotted at the foot of the machine and liquor absorbed by the fabric is expressed by the squeezing rollers and falls back again into the trough. The rollers R and R 1 revolve about 60 revolutions per minute and after the scouring has been completed the machine can be emptied of the soapy liquor and clear water run into the trough so that the piece may be thoroughly rinsed. The two operations may be completed without having recourse to a second handling of the material, which is important in days of labor shortage. By this machine it is claimed that a 30 per cent saving in soap can be effected and the material can certainly be dealt with in a much shorter time than is the case with the previously described systems. The machine is extremely clean in its action and no liquor is splashed about the floor whilst the next lot of fabric can be treated with the same scouring liquor with the addition of a certain percentage of soap.

Among the Knitting Mills.

The F. H. Brayton Company, New York, has been incorporated with a capital of $25,000 to engage in the manufacture of knit goods, textiles, etc. F. H. Brayton, L. D. Amerman, Freeport, and P. J. Smith, Montclair, N. J., are the incorporators.

Final contracts have been awarded by the Better Sox Knitting Company, Ft. Atchison, Wis., for the erection of a new two-story addition to its knitting mills. The structure will be of brick, about 50 x 60 feet, and is estimated to cost about $40,000. It is designed to be used for increased capacity. A. R. Hoard is manager.

Notice has been filed with the Secretary of State by the Niagara Fabric Manufacturing Company, 47 Greene Street, New York, of an increase in its capital from $25,000 to $75,000 to provide for general business expansion.

Arrangements are being made by Taubel Brothers, Cedar and Huntington Streets, Philadelphia, Pa., manufacturers of hosiery, etc., for the erection of the proposed new three-story addition to their plant at an early date. The structure will be about 48 x 70 feet, and is estimated to cost $15,000. William Lowenthal, 1208 Chestnut Street, is architect for the company.

The Cooper Underwear Company, Manistee, Mich., has recently completed the remodeling and rebuilding of the structure recently acquired, formerly known as the Briny Inn, to be used as an extension to its plant for increased capacity.

The Shillington Hosiery Mills, Shillington, Pa., are planning for the early inauguration of operations in the new dyehouse recently erected at their plant.

The U-Knitty Underwear Company, Inc., New York, has been incorporated with a capital of $5,000 to engage in the manufacture of knit underwear, hosiery, etc. Jacob Horo-

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witz, E. M. Cohen, and Harold J. Carton, 230 Fifth Avenue, Brooklyn, are the incorporators.

The Arr Tee Knitting Mills, Philadelphia, Pa., which recently filed articles of incorporation with a capital of $25,000, have completed negotiations for the leasing of property at 1210 Race Street, comprising approximately 9,000 square feet of floor space.

The Zall Brothers Knitting Mills, Inc., Brooklyn, N. Y., has been incorporated with a nominal capital of $5,000 to engage in the manufacture of knit goods. J. and R. Zall, and I. Brotman, Brooklyn, are the incorporators.

The Oakbrook Hosiery Mill, Oakbrook, near Reading, Pa., has recently completed the installation of a quantity of new equipment at its plant, including additional knitting and finishing apparatus, to increase operations.

Plans are under consideration by John Bohler, 637 Penn Avenue, West Reading, Pa., for the establishment of a local plant for the finishing of hosiery for knitting mills.

The Appel-Hall Knitting Mills, Philadelphia, Pa., have recently completed the removal of their plant from 5425-27 Germantown Avenue, Germantown section, to larger quarters at 24 Church Lane, to provide for increased operations.

J. N. Pruden is president and F. W. Hobbs, secretary of the Edenton (N. C.) Hosiery Mills, a newly organized company of Edenton business men who will establish a considerable hosiery mill in that town. The company is incorporated with an authorized capital of $125,000, with $30,000 already paid in. The directors of the company are E. C. White, H. C. Privott, T. W. Elliott, M. G. Brown, H. G. Wood, Jno. C. Bond, J. H. Holmes, L. F. Zeigler and J. N. Pruden.

American Underwear Finishing Press.

This machine, which is shown in the illustration, has just been put on the market by the American Laundry Machinery Company of Cincinnati, Ohio, and is used for finishing underwear, after it is pressed flat and folded, and ready for boxing. The garment is laid folded on the buck of this press just before boxing, then pressed, and this operation gives an extra fine finish to the goods. It also gives a folding line so that when the goods are displayed to customers in the store, they can be readily folded back into position for future display. The machine may be used on flat knit goods and on one and one, two and two, and three and three knit goods. The use of this machine enhances the selling value of the merchandise and facilitates their display. It may be procured with air, belt or motor drive, but the manufacturers recommend the air-driven machine as this has a capacity of approximately 200 dozen garments per day. Although this machine has been on the market but a few weeks, several installations have already been made.

The Hidden Side of the War.

(*Continued from page* 472.)

But that is not the worst. At Bogota, New Jersey, in the New Jersey Agriculture Chemical Company, Dr. Schweitzer employed Dr. Walter Scheele, who was the inventor, in that little town of New Jersey, in 1913, of mustard gas, the formula of which he transmitted through Captain von Papen to Germany as soon as the war broke out. This is the mustard gas which laid low your brothers on the plains of France. And for Scheele Dr. Schweitzer laid out the plans for the preparation of the bombs.

Untold millions were spent by this man in propaganda and espionage in the United States. In the two years before we entered the war, the Bayer Company drew $2,000,000 from the profits of its Orient and South American houses, which money was spent here, for what purposes we can well imagine. It never went through their books. Practically all of the dye salesmen you saw were only nominally in the employ of the branches here; all had secret and personal contracts with the home office.

All that I have said of Schweitzer is typical of practically all representatives of German dye houses in this country. Wherever we have found espionage or propaganda activity, there you will find those names so familiar to you in the days of your slavery. You will find the same gang returning, decrying our dyes, selling apparently Swiss or unmarked dyes, telling you tales of German distress, serving as ever their Fatherland. Be on your guard.

Coincident with the development of Germany's dye industry came the general development of her chemical strength. It offered great incentives to young men. It developed a large body of trained scientists. It encouraged and fostered the spirit of research in all lines, and added to the effectiveness of practically every industry in the empire. Nowhere is this more striking than in the supremacy Germany was attaining in chemical medicine.

One other thought I want you to have in mind is this: For four years now the chemical science developed by the dye industry of Germany has focussed its mind largely upon substitutes for the raw material she has hitherto received from the outside world. The leader of her chemical industry in this country, Dr. Hugo Schweitzer, of whom I will have more to say later on, wrote to his government:

"All these endeavors to substitute cotton may appear ridiculous to us who have been brought up with the idea that Cotton is King and that America has been designed

by fate to supply this fibre to the civilized world. The farmers who cultivated the madder root, and the planters who raised indigo were also inclined to jest when they were apprised of the fact that German chemists had succeeded in reproducing in the laboratories the dyes which their crops furnished; but when the manufactured materials drove the natural products from the market, and left the farmers and planters without a job, hilarity ceased. History can repeat itself and willowbark and nettle, or some other substitute, raised on German soil, may in the near future, depose King Cotton. The German chemist has a duty to perform, and with his perseverance and application he does not shrink from any problem, however difficult it may appear to outsiders."

Gradually Germany was obtaining control of the pharmaceutical industry of the world, and gradually it was dawning upon her that this development, too, might put in her hands an even more powerful weapon than explosives or poisonous gas in her conscienceless conquest of the world. Most of the great discoveries in chemical medicine came directly from the dye laboratories. Are you content that the development of chemical medicine shall remain the exclusive possession of the German nation as we now know it?

Briefly then have I tried to give you a picture of the situation of this country in its relation to the dye industry, as our daily experience of the past nineteen months unrolled it before us. Do you wonder that A. Mitchell Palmer and all those who fought under him were shocked beyond measure, and could not rest until congress had amended the Act and had given us the power under which we could, and have, rooted out each and every branch of that system and sold it into the hands of patriotic Americans?

4,500 of these patents which applied to chemistry Mr. Palmer has sold for the benefit of American industries to a quasi-trustee corporation, called the Chemical Foundation. This company is capitalized for $500,000, $400,000 being six per cent preferred stock and $100,000 common stock, also limited to dividends of six per cent.

The stock has been all underwritten by members of the Dye Institute, each and all taking their share, and is now in process of distribution through the dye producers and, eventually, through the consumers. It is the intention that ultimately no one will own more than a thousand dollars' worth of stock, eight hundred preferred and two hundred common.

All license fees accruing to the Foundation will be used first to pay back the preferred stock. All surplus then above the six per cent actually invested will be expended for the development of research and encouragement of the chemical industry of America.

Its executives serve with enthusiasm and without pay. All of its stock is trusteed for a period of seventeen years. Its management and its policies are controlled by a board of trustees, consisting of Otto Bannard, president of the New York Trust Company, chairman; Cleveland H. Dodge; George L. Ingraham, late presiding justice of the appellate division of the New York supreme court; Ralph Stone, president of the Detroit Trust Company, and Benjamin Griswold, of Brown & Son, Baltimore. These gentlemen have been serving as the advisory sales committee of the Alien Property Custodian for over a year. They represent the highest standard of American patriotism and disinterestedness. Long lives of manifested ability, long lives of unselfish service to their country guarantee the character of the Chemical Foundation.

Its counsel is Joseph H. Choate, who as a dollar-a-year man, has given eighteen months of tireless and efficient service in the exclusive study of the chemical situation. Its patent counsel is the fighting Ramsay Huguet.

This Foundation proposes to license to any competent, equipped and patriotic American individual, firm or corporation, such of these patents as, with the help and encouragement of the Foundation, may be utilized. This Foundation proposes to begin to fight at the customs gate against any violation of the patents now owned by it, whether they appear as denationalized or camouflaged products seeking to enter through neutral sources. It proposes to establish an Intelligence Department which will coordinate, preserve and utilize all the chemical information gathered by every department of the government during the war, and make that information available to the American public that they may know the exact truth as to the past, and may be kept apprised of all German activity, either through its own agents or its American connections, during every stage in the coming struggle.

It proposes to match with watchfulness and pitiless publicity all future attempts at espionage or propaganda in our land. It proposes to expose all unfounded criticism directed against our productions, and, on the other hand, to do what it can to prevent producers or dealers here casting reflection upon our industry by the marketing of inferior or dishonestly described products.

It proposes to encourage and foster chemical research by cooperation with the forces already at work; by offering some hope of protection and reward to the loyal research men in the United states government service, who now by department rule have to dedicate their inventions to the public, a course which results only in Germany transferring these inventions to her own laboratory system for development or exploitation.

It proposes to bring about a closer union of the university and the factory. It has taken over all German copyrights, and will thus free much scientific literature from the shackles of the German language. It proposes to place all possible information on our situation before congress, and ask the passage of a law establishing a license governing all chemical importations for a period of ten years. It is intended that this license system shall act at one and the same time as a guarantee to you and all other dependent industries of proper importations to enable you to meet the competition of other lands, and to protect and guard our growing chemical independence. In this we ask no more than England, France, Italy and Japan have already decided to grant on behalf of their own independence. This request we base upon the following grounds:

1. Fairness to the $450,000,000 invested in the chemical business by loyal Americans in the hour of our need.
2. Independence and freedom of the textile, leather, paper, paint and varnish, pharmaceutical three-billion dollar essential American business.
3. The necessity of our national defense.
4. The destruction and prevention of the German system of propaganda and espionage in our land.
5. The advancement of pure science and research.
6. The advancement of medical science.

The granting of this license system is not a question of conflicting economic schools. It is the question of our national independence, safety and education.

Once we are assured time in which to work out our salvation, we hope to turn to our dearest objective. Already we have started to make a survey of our laboratory equipment, governmental, university and factory. Already company after company have passed resolutions through their boards of directors, placing at the disposal of our trustees, under such terms and conditions as those trustees may dictate, their entire research capacity. Government laboratories and university laboratories have also been assured us. Gentlemen, we know that offer will be unanimous.

We will soon be able to go to the medical profession of America and offer to them the entire capacity of the country for experiment and research for the betterment of mankind. One medical chemist in one dye factory in Germany discovered the cure for syphilis, the deadliest enemy of mankind.

We are assured that somewhere in that realm lies the hope of the cure for consumption, cancer, and many of the seizures which rob us of our little ones. Can it be that herein lies the opportunity of converting the forces which up to now have been directed only toward desolation and destruction into the channels of alleviation and helpfulness to humanity? Can it be that through this medium idealist America may snatch the torch of misapplied science from the barbarian, and place it in the hands of an enlightened civilization?

Gentlemen, Drs. Albert and Bernstorff reported to their government that America could never establish the dye and pharmaceutical industry in this country, as we lacked the moral power for the creation of such an industry; that here each party pursued its own selfish interests, but nobody kept the whole in mind; that this problem could only be solved through regard for all points of view, and that the conflicting selfishness of this country rendered that solution impossible.

The Chemical Foundation answers this statement with a challenge, and if it can only become the coordinating forum for American patriotism, American sacrifice, and American ability, it awaits the issue with serenity.

Gentlemen, we are the boys who stayed at home. True, the reasons seemed sound and sufficient yesterday. But today they seem only excuses, ever decreasingly satisfying. It is not enough that with envious tears we cheer their homecoming.

Would they know our admiration, they must sit by our fireside and listen to us teach our children the character-building tales of their sacrifice. Would they know our love, they must lean over the cribs of those little ones and listen to the prayers of gratitude those little lips are lisping in their behalf. Would they know the depths of the realization of our obligations, and the strength of our resolve that they shall not have suffered and died in vain, we call upon their spirits to watch us in this fight. Peace, peace, and there is no peace!

At the close of Mr. Garvin's remarks, President Shove introduced Col. James H. Perkins, who presented an address on "America's Part in World Commerce."

The last speaker at the banquet was Dr. Harry Emerson Fosdick, who spoke on

"Our Higher Duty to the World."

As one who comes from the outside and is not familiar with your work, I gain the impression that you have some problems on your hands. I can only advise you to tackle them with something of the same spirit I saw manifested by our men across the sea. When I think of war I never think of bursting shrapnel, although I have been up where it was flying crossways overhead.

I think of the entirely different side of it. I think of a boy sitting down and writing like this to his mother: "Dear Mother, I have been peeling potatoes all day. When this war is over I will make some girl a nice wife." (Laughter.) When I think of war I think of a group of our men sitting in the May sunshine a year ago with their shirts in their hands, running soberly down the seams. Well, they don't smile, it was just part of the everyday ordinary familiar monotonous business of war, and that boy who sat right next to me—who evidently had been brought up in a Sunday school and read a hymn book—I heard him say to himself, "Oh you pilgrims of the night." (Laughter.) When I think of war, I think of an island off the northwest coast of Brittany, one of the bleakest places on earth, and where food supplies are very scarce. Well, that was putting it mildly. Before our men reached that island there wasn't a landing place, there wasn't a tree, there wasn't a drop of water, and there wasn't a human habitation before 300 of our naval forces formed a kind of cooperative party to civilize it.

Now out there was a boy who received a letter which ran something like this: "I am so glad that you have gone into naval aviation. It must be wonderful dropping bombs on German submarines. I hope that you will make a great success of it, and that when you come home you will be an Ace." Now the only thing that that boy had ever driven in France was a wheelbarrow, and he knew that as long as he stayed there the only thing he would ever have a chance to do would be to drive a wheelbarrow, but he sat down and wrote to his best girl like this: "I, too, am glad that I have gone into naval aviation. You will be happy to hear that I am making a great success of it. Just at present I am driving an Irish monoplane (laughter), and you will be glad to know that I am being trusted with it nine hours a day. (Laughter.)

Now that is war. To go over there quite prepared to drive a Caproni triplane and discover that war is mostly running an Irish monoplane, and I never was so proud in all my life to be an American, to watch the bounce, the resiliency, and the good spirit with which our men, so many thousands of miles across the sea carried on, not simply the military program, but their own personal program of everlastingly keeping up their spirits when they were almost dying of homesickness, and so I say to you men, you're up against a tough economic problem, but in God's name pile into it. It is what the fellows did across the sea, and if you put your minds to it, you can win out the way they did. (Applause.)

Now I always feel suspicious about subjects with the word higher in them. I was supposed to talk about our "Higher Duty to the World" and as soon as I faced the subject, I remembered that the conversation which a group of women had about philosophy, and one said: "Do you believe in the higher pantheism?" And its answer was: "In higher pantheism I can't say exactly, but I could never see why some men wear them so low that they get all frazzled up at the bottom." (Laughter.) Now I am not exactly sure what is meant by our "higher duty," but

take it that there is no man of us that does not feel, in the light of tremendous sacrifices which have been made to make this world a more decent place to live in, that there is a high ethical obligation on every man of us to keep up that fight until we fall asleep. I take it that here in this great gathering that this note was wanted struck, and that you will be glad to have it struck.

Before this war, how well contented we were with our material civilization, how pretty well assured we were of the incalculable benefit that was being derived by our progressive use of the latent resources of the physical universe, and how oftentimes we stood and thought of what we had fashioned, the buildings of stone, blazing electricity, and we said, as Nebuchadnezzar said, "Behold, this Babylon which I have builded." Anybody feel like talking in just that contented fashion today? Steel is wonderful, gentlemen, but it can make bayonets to slay and guns to bombard defenseless cities 70 miles away. Electricity is marvelous, but it can charge a stockade, as it did in Belgium, and prevent the escape of refugees. Applied science is wonderful, but it can make poison to slay men with their own breaths, and tanks and aeroplanes and submarines to do things more hideous than the old believers in devils thought possible.

Modern transportation—wonderful. Yes, but it made it possible for men from Vladivostok and Tasmania to die together in the same pool of blood on a French battlefield. And modern finance—marvelous—but it makes it possible for a nation to pledge the credit of its children and their children after them in waging war to a point of exhaustion.

I take it that there are two general directions in which men who are in possession of the kind of opportunities that you have can make their influence felt. In the first place, men, we have got to stand, as we never stood before, for democracy. Emerson said that one of the greatest days in a man's life was when he turned the corner and ran into a new idea. Well, just about three times in the race's history has our civilization had that experience. First, our civilization turned the corner of the street and ran into that religious tradition that started with the prophets and culminated in Jesus of Nazareth. It never has been the same since. Something happened at that meeting from which humanity never will escape.

Second, our civilization turned the corner and ran into the idea that if we faithfully study the laws of nature, we can get such control of the law-abiding forces of the universe as will enable us to remake the earth. It has never been the same world since, and never will. Third, our civilization turned the corner of the street one day and ran into the idea that all the people, rich and poor, learned and ignorant, can be trusted in cooperative fellowship to frame laws which all the people will obey. It was a prodigious idea, arguments against it; perils in it, clearly. It was an advenuture in comparisons, with which the voyage of Columbus was child's play. The Hebrew Christian faith, the power of applied science, the idea of democracy—from these three things flow all the characteristic elements of our Western civilization. These things are the heart of the heritage which we have from our fathers before us and for our children after us.

Hereafter the thing we have got to fight in America is class rule.

Now I am sure you gentlemen will recognize that there is a class rule coming from the capitalists and there is even now a class of capitalist who hasn't had a new idea since 1880. He still is thinking of business as having for its one objective making wealth for the individual. He hasn't caught that idea that this war illuminated until it should have become obvious to everybody, that the glory of business is that it is an absolutely indispensable service to the entire community.

When those men went out to battle for us in France, the hearts of that kind of capitalist were touched. Were not these men bearing the burden? Nothing that could be done was too much for their lavish generosity to undertake, but now that these same men have come back home and have joined that other army which, day after day, goes up to the shops and factories once more bearing the burdens of the nation, the whole tone of this capitalist changes. They are not men any longer, they are labor. You know as well as I do that that type of capitalist represents a peril, and there is nobody who has quite so much at stake to prevent him from getting control as just such men as are gathered in this room tonight.

Some years ago, in the Lawrence jail, I visited a leader of the I. W. W. He was very frank about his program. "Capital," he said, "will not get out of the chair till we tip the chair." I said, "Ettor, what do you mean?" "Violence," he said. "We will spoil their machinery, by emery dust; we will spoil their cloth by clipping; we will girdle their fruit trees. We will make business in this country so unprofitable that it will fall at last into willing hands and the proletariat shall rule." That is class rule. Now I don't know much about the economics, but I do know the spirit in which this whole problem of ours must be solved. We have got to get together. We almost had this spirit in this war, when the welfare of the nation loomed so much larger and the party cry of any class was not heard, when a man almost saw what McCauley sang about in ancient Rome. "Then none was for party and all were for the state. Then great men helped the poor man, and the poor man loved the great."

The Joseph Dixon Crucible Company of Jersey City, N. J., manufacturers of lead pencils, crayons, erasers, silica-graphite paint, crucibles, graphite greases and graphite automobile lubricants, have announced the removal of their Philadelphia sales office from 1020 Arch Street to Rooms 801 and 802 of the Finance Building, South Penn Sq., Philadelphia, Pa., May 1st, 1919. The Philadelphia sales district comprises Pennsylvania, Southern New Jersey, Delaware, Maryland, District of Columbia, Virginia and West Virginia.

The removal of the Philadelphia office from a store to an office building is also a change in policy but as the trade in the Philadelphia district carry large stocks of Dixon's products a still greater dependence will be placed on them in the future.

The Dixon sales organization in Philadelphia under the able management of W. G. Stringer, who entered the employ of the Dixon Company in 1898 and also succeeded W. J. Coane as the Philadelphia district sales representative in 1912, is prepared at all times to be at the service of the trade.

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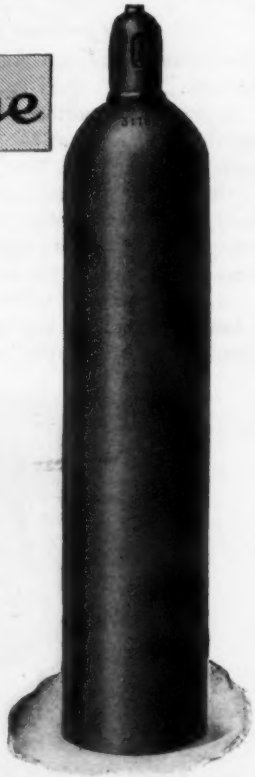

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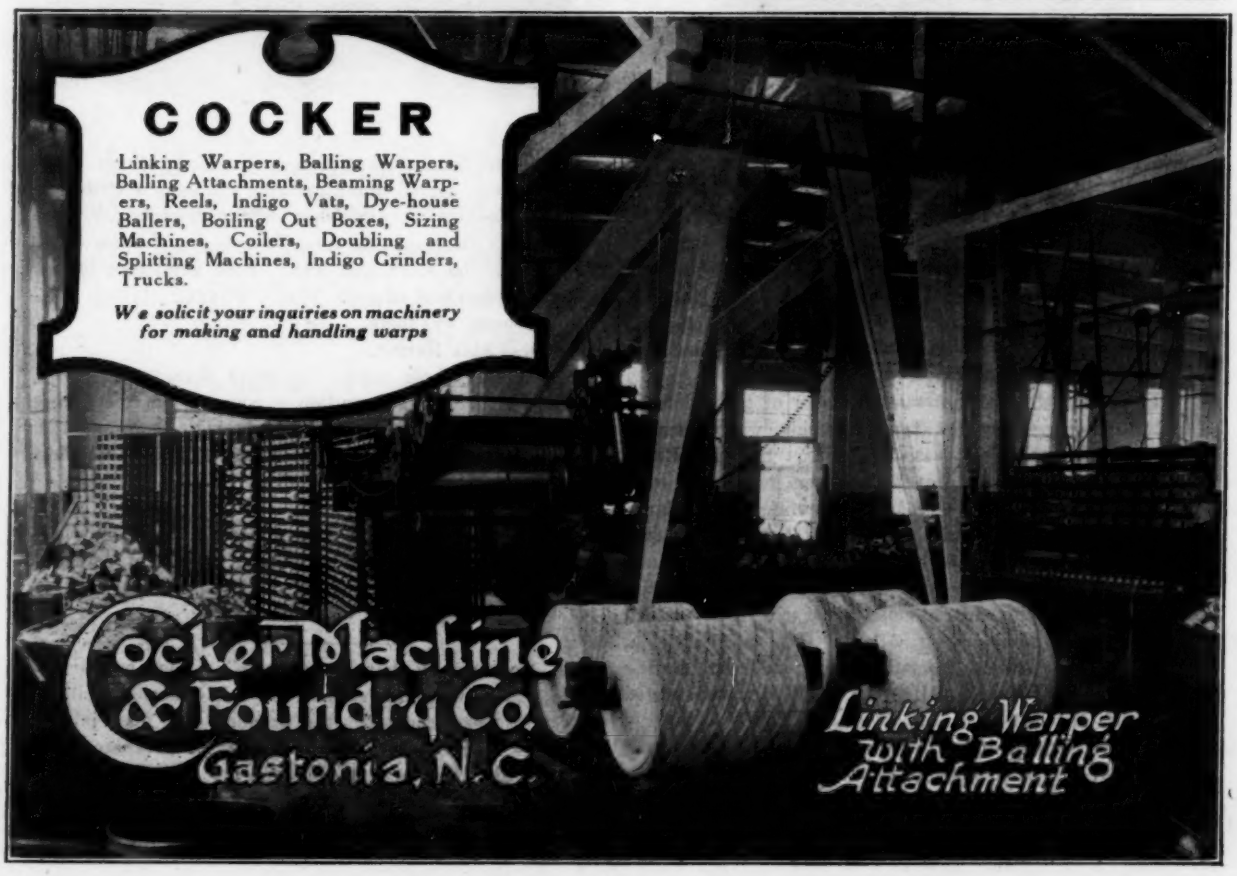
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We solicit your inquiries on machinery for making and handling warps
Cocker Machine & Foundry Co.
Gastonia, N. C.
Linking Warper With Balling Attachment

Convention Notes.

(*Continued from page* 514.)

Parks-Cramer Company was a visitor at the show during the week.

A prominent northern man present at the exposition was Geo. S. Cooper of the Hooker Electro-Chemical Company, 40 Wall Street, New York City.

One of the incidents of the week, and one that was never satisfactorily solved, was what happened to the bath tub of a certain young man, but ——(the balance of this story was deleted by the censor).

A. A. Underwood of the Frank Mossberg Company of Attleboro, Mass., was kept busy demonstrating the unbreakable features of the steel beam heads made by his concern.

C. C. HARDING.

C. C. Harding, southern representative for the Permutit Company of New York City, was meeting his many friends at the show. He was accompanied by Mrs. Harding and Miss Harding.

L. W. Penny, mechanical engineer, and Charles Mills, constructing engineer for the Saco Lowell Shops of Boston, were among the New England visitors at the exposition.

M. G. White, manager of the Cincinnati office of the U. S. Ball Bearing Mfg. Company of Chicago, Ill., was greeting old acquaintances at the exhibit of his company and assisting in explaining the advantages of the well known "Strom" ball bearings.

E. L. Darnell, assistant sales manager of the Baker R. & L. Company, Industrial Truck Division, was present a large part of the week, assisting district manager F. C. Myers. The active demonstration, given by special demonstrator Gregg of this company in running their tractors and trailers up and down the streets of Greenville, carrying huge loads of cotton and other materials, attracted much attention and much newspaper comment.

James W. Smith, district sales manager of the Southern States Supply Company of Atlanta, Ga., and Columbia, S. C., was displaying automatic cooling and refrigerating systems for the home and for the mill. He was assisted by E. K. Mitchell.

Reuben Finnell of the American Scrubbing Equipment Company, was demonstrating the Finnell system of power scrubbing, much to the interest of those manufacturers desiring to reduce labor costs.

"Dick" Tinkham, southern representative of the Square D Company of Detroit, Mich., manufacturers of enclosed safety electric switches, sang a barber shop tenor in the chorus part of the time and devoted the balance of the time to taking the leading part in some fancy dances, in the accomplishment of which he was aided by J. J. Perry, the popular sales manager of the Carter Electric Company of Atlanta, who gave a very accurate reproduction of a willowy female being led through the maizes of the dance by her Adonis.

V. WICHUM.

V. Wichum, Chief Engineer for the C. J. Tagliabue Mfg. Company, Brooklyn, N. Y., was one of the exhibitors who was kept very busy explaining his apparatus to the visitors. In Mr. Wichum's case, it was temperature regulators.

Cameron Macrae of Concord, N. C., southern sales agent for the Arabol Manufacturing Co., was a visitor at the show, as was Guy Melchor, who represents the same company in Georgia, Alabama, Tennessee and some other territory to the south and west. Both gentlemen looked fat, prosperous and happy.

Terryberry was there.

So was Jack Horner.

In closing these notes, the scribe does so not from choice, nor because ammunition is running low, there were at least a thousand acquaintances who were there and who have not been mentioned. But space is limited and finis must be written.

But—

There are many of us who would like to know where "Bill" Rooke went on Friday evening (or was it Saturday morning?) and what became of the key to his room at the hotel. Who else was in on this?

A factory kept "spick and span" in good appearance by a protective paint, such as Dixon's Silica-Graphite, is a good advertisement for the products and financial stability of that factory. The factory looks prosperous and reliable, and therefore the deduction made by the passer-by is that the products of that factory are reliable. Dixon's paint is used both for metal and wood.

"TOLHURST"

A Name And A Machine

that represent quality and satisfactory service.

Scientifically constructed to be "Self-Balancing."

TOLHURST EXTRACTORS

remove the danger of the unbalanced load and always work smoothly.

The result is that Tolhurst Machines always run when you want them to run and repair bills are reduced to a minimum—no trouble from delayed operation—no worry—because of badly worn parts.

Dependable, efficient, safe, Tolhurst Extractors have achieved a popularity that makes the Name of Tolhurst recognized everywhere as the hall-mark of high quality and durable service.

If you are not familiar with the unusual advantages of Tolhurst Extractors, send for our catalogue.

Sizes 12" to 72"—engine, countershaft and motor driven from floor or ceiling.

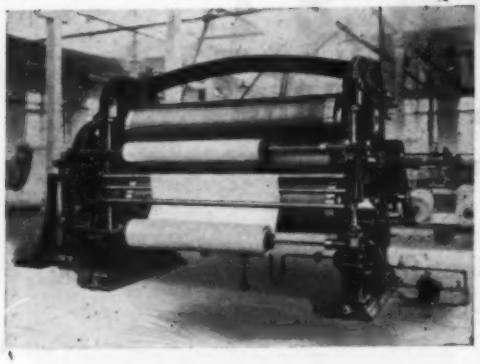
TOLHURST MACHINE WORKS

Established 1852 **New York Office, 111 Broadway** **TROY, N. Y.**

SOUTHERN REP.
Fred H. White,
Realty Bldg.,
Charlotte, N. C.

WESTERN REP.
John S. Gage,
Hartford Bldg.
Chicago, Ill.

CANADIAN REP.
W. J. Westaway Co.,
Sun Life Bldg.,
Hamilton, Ont.



Hydraulic Schreiner Calender

NOT boastfully, but with sincere satisfaction do we look upon the fact that for 100 years the name "Butterworth" has been associated with the foremost in the development of the textile industry. It adds to Butterworth Finishing Machinery, that backing of experience and responsibility that is the buyer's surest and most complete guarantee of satisfaction.

Write for catalog stating fabric and finishing required.

H. W. BUTTERWORTH & SONS CO.

Established 1820

PHILADELPHIA

Providence Office: Turk's Head Bldg.

Canadian Representative W. J. Westaway Company, Hamilton, Ont. Can.

FINISHING Butterworth MACHINERY

FRANK HEMINGWAY, Inc.

115 Broadway

NEW YORK CITY

Dyestuffs, Intermediates, Chemicals

AURAMINE O-OO	CAUSTIC SODA
MALACHITE GREEN PDR. AND CRYS.	SODA ASH
	GLAUBERS SALT
VICTORIA BLUE B	ACETIC ACID
CRYSTAL VIOLET CONC.	SULPHURIC ACID
SAFRANINE Y	CHLORIDE OF LIME
DIRECT FAST PINK Y	SODIUM SULPHIDE
DIRECT FAST ROSE B	TANNIC ACID
FUCHSINE CRYSTALS	ANTIMONY SALTS
SULPHUR BLUE	SODIUM BICHROMATE
DIRECT BLUE 2B	BLUESTONE
DIRECT NAVY BLUE	ANHY. SOD. SULPHATE
NAPHTHOL GREEN	

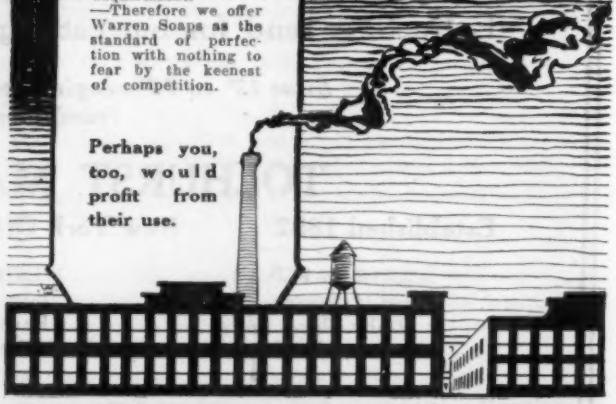
FACTORY: - - - BOUND BROOK, N. J.
WAREHOUSE: - - 27 THAMES ST., N. Y. C.
BRANCHES: - BOSTON, MASS., AND LONDON, ENG.

WARREN Soap

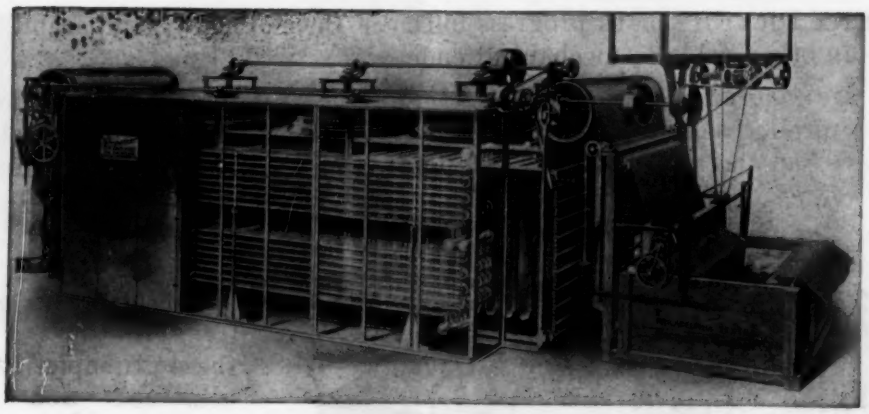
Since 1870

Warren Soaps have gained steadily in prestige and today are pre-eminent.
—This result has been achieved by years of the most severe and exacting tests by every mill requirement.
—Therefore we offer Warren Soaps as the standard of perfection with nothing to fear by the keenest of competition.

Perhaps you, too, would profit from their use.



THE WARREN SOAP MFG. CO.
77 SUMMER STREET, BOSTON, MASS.



PROCTOR SHRINKING MACHINE FOR CLOTH
Showing Some of the Side Panels Removed

"THOROUGH and COMPLETE SHRINKAGE"

THE concensus of opinion on the new Proctor Shrinking Machine is expressed in the above quotation. Nationally known concerns who have had experience with this machine are absolutely satisfied that they obtain more thorough and complete shrinkage with a Proctor Shrinking Machine than by any other previous method they have tried.

The Proctor way is the most efficient and economical way to shrink woolen cloth, olive drab cotton, shirting, etc. Everything from overcoatings to linings have been run through the Proctor Shrinking Machine with equally satisfying results.

"Proctor" DRYERS FOR EVERY KIND OF TEXTILE NEED

A LARGE roll of cloth passes through the Proctor Shrinking Machine in 5 to 8 minutes, as compared with 12 to 18 hours required by other methods. The labor of three to six men is saved, depending on the methods now used. Also three-quarters to five-sixths less space is required for the operation. What' more, the cloth does not hang in tremendously long loops. In the Proctor Shrinking Machine there is no tension on the wet material while it is drying,—the loops are short and preserve the natural quality of the goods.

A PROCTOR Shrinking Machine in your plant will pay for itself in a surprisingly short time. It increases production and gives uniform results.

INVESTIGATE. Submit details of your operations to us and we will promptly advise you as to what can be done. The only obligation is ours.

PHILADELPHIA TEXTILE MACHINERY CO.

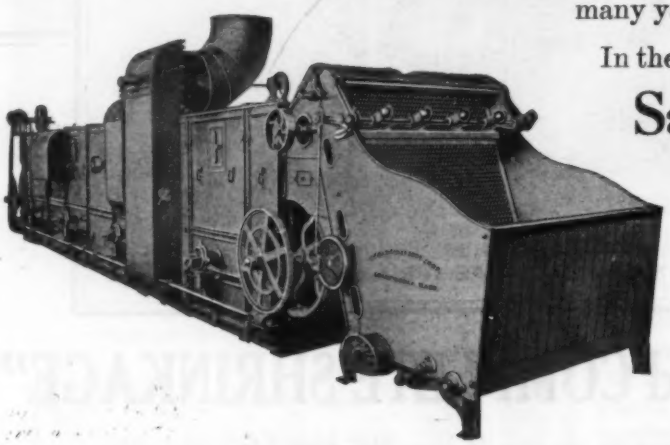
Seventh Street and Tabor Road.
PHILADELPHIA, PA.

CHICAGO, ILL. Hearst Building. CHARLOTTE, N. C. Realty Building. PROVIDENCE, R. I. Howard Building.
HAMILTON, ONT., CAN., W. A. Westaway Co., Sun Life Bldg.

43

SARGENT DRYERS mark progress in Dryer Development comparable to that made in other fields of mechanical endeavor.

They are favored with a natural preference because they are designed on basic principles of air circulation, conveying, and general drying apparatus construction, which have had the approval of discriminating mill men and drying engineers for many years.



In the

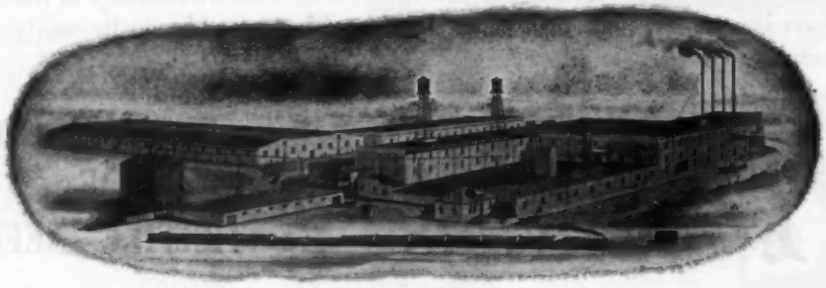
Sargent Dryer

these principles have been combined and refined, making a complete machine which is unexcelled.

For drying cotton, linters, wool, hair, flax and other classes of raw material.

C. G. SARGENT SONS Corp., GRANITEVILL MASS.

FRED H. WHITE, Southern Agent, Charlotte, N. C.



VICTOR MILL STARCH

The Weaver's Friend

It boils thin—it penetrates the warps—increases breaking strength and carries the weight into the cloth. Being thoroughly washed free of gluten and other foreign matter it gives a bleach and finish to the goods that you can get from no other starch.

A trial order will convince you that VICTOR STARCH has no equal on the market.

THE KEEVER STARCH COMPANY, Columbus, Ohio

Southern Agent: MR. JAMES H. MAXWELL, Greenville, S. C.

If you are not already using VICTOR STARCH call on our representative for a demonstration at your convenience

Dirty Oil-Saturated Waste

Completely reclaimed

Reclaim your dirty Mill End Waste —it's Profitable

THE mill end waste you burn or throw away, without getting the last iota of service out of it, is being wasted and you are throwing away money.

By means of the American Mill End Waste Reclaiming System, this so called worthless material can be reclaimed and reused many times at a saving of hundreds of dollars to you.

The oil is first extracted so that it, too, can be reused. Tests show that there is about 1 gallon of oil in every 20 pounds of oil saturated waste, and oil is worth money.

Then the waste itself is reclaimed. It is thoroughly cleaned so that it is good as new, in fact better, softer and more absorbant. This is all done at a cost of less than three cents a pound.

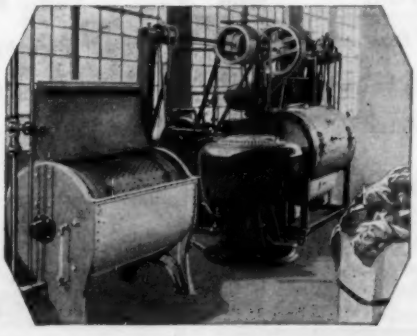
Tell us how much waste you use yearly and we will estimate closely the saving this equipment will effect. In many instances it amounts to impressive figures.

Write for complete facts concerning this profitable mill equipment—without obligation.

The American Laundry Machinery Company

Specialty Department, CINCINNATI, OHIO

H. G. Mayer,
Southern Textile Agent,
Realty Building,
Charlotte, N. C.



Also manufacturers of the American Rotary Hosiery Press—Automatic Underwear Press—Hydro Extractor—Rotary Fulling & Dyeing Machines—Knit Fabric Ironer — Underwear Finishing Press—Rotary Dryers.

1872 1919

CHEMICALS, DYESTUFFS COLORS, GUMS, OILS

FOR THE TEXTILE INDUSTRY

HEADQUARTERS FOR

ACID, BASIC, DIRECT, CHROME and SULPHUR COLORS; "CIBA" and "CIBANONE" FAST VAT DYES

A. KLIPSTEIN & COMPANY

644-652 Greenwich Street NEW YORK CITY

Slashing Costs Slashed

by using

Amalol and Liberty Gum

in your size

These two "Amalie" Brand Textile Products boast of numerous users among the South's leading cotton mills.

You Can Be Sure That

1. The tensile strength of the fibre will be increased 15 to 20%.
2. Shedding and mildew will be wholly eliminated.
3. Better and more uniform whites will be obtained.

L. SONNEBORN SONS, Inc.

Textile Department
262 Pearl St., New York, U. S. A.
Branches in all important cities.

Also Manufacturers of "Amalie" Lubricating Oils and Greases

BOSSON & LANE

Manufacturers and Importers

Castor Oil and Castor Oil Products

Turkey Red Oil	Soluble Grease
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Bleaching Oil	Olo Soffene
Monoline Oil	Snoflake Softener
Victroline	T. R. Soap
Soluble Oil	Oleine

Flaxhorn—The Delicate Finish.

Works and Office: ATLANTIC MASS.

Dicks, David Co. Inc.

WE ANNOUNCE

that we now have a complete line of SULPHUR COLORS, suitable for all kinds of wash goods. We especially call your attention to our

SULHPUR BLUE

which we believe to be the brightest SULPHUR BLUE on the market today. Our other Sulphur Colors are

SULPHUR BROWN
SULPHUR GREEN
SULPHUR YELLOW
SULPHUR BLACK
PRIMULINE

which makes a complete line for wash goods of all kinds.

We also carry a complete line of

BASIC, DIRECT, OIL, SULPHUR CHROME and ACID COLORS

ANILINE SALT and ANILINE OIL and a complete line of other heavy chemicals suitable for all dyed goods is carried in stock.

Ask for dyed and product samples and let us prove our contentions.

Stock of Sulphur Black carried in Charlotte, N. C., and Atlanta, Ga., for quick deliveries.

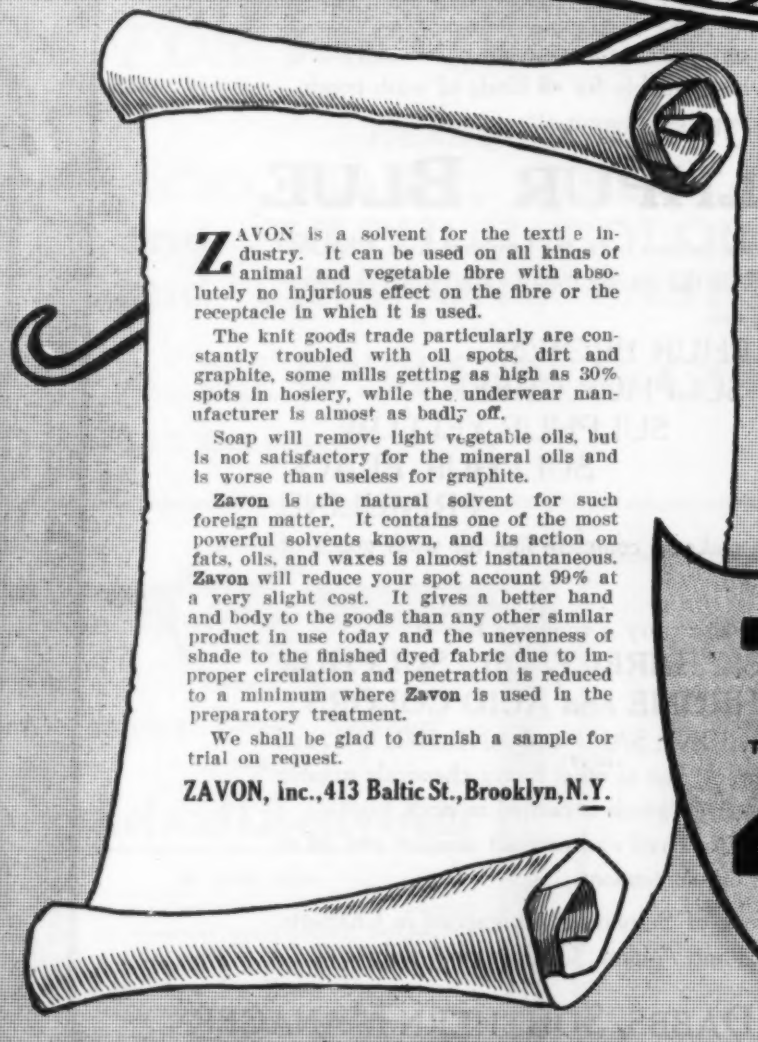
BEN R. DABBS, SOUTHERN MANAGER

CHARLOTTE, N. C.

Main Office, 299 Broadway, New York City.

Charlotte, N.C.

ZAVON



ZAVON is a solvent for the textile industry. It can be used on all kinds of animal and vegetable fibre with absolutely no injurious effect on the fibre or the receptacle in which it is used.

The knit goods trade particularly are constantly troubled with oil spots, dirt and graphite, some mills getting as high as 30% spots in hosiery, while the underwear manufacturer is almost as badly off.

Soap will remove light vegetable oils, but is not satisfactory for the mineral oils and is worse than useless for graphite.

Zavon is the natural solvent for such foreign matter. It contains one of the most powerful solvents known, and its action on fats, oils, and waxes is almost instantaneous. **Zavon** will reduce your spot account 99% at a very slight cost. It gives a better hand and body to the goods than any other similar product in use today and the unevenness of shade to the finished dyed fabric due to improper circulation and penetration is reduced to a minimum where **Zavon** is used in the preparatory treatment.

We shall be glad to furnish a sample for trial on request.

ZAVON, inc., 413 Baltic St., Brooklyn, N.Y.

THE TEXTILE SOLVENT

The Grasselli Chemical Company

"Dyestuff Department"

Works at Grasselli, N. C.

Albany, N. Y.
Providence, R. I.
} *Formerly Owned by The Bayer Co., Inc.*

SULPHUR COLORS: Black, Blue, Brown, Green

Direct Cotton Colors, Acid and Chrome Colors

MONOPOL OIL

Bichromate of Soda *Sodium Sulphide*

Zinc Dust, Chemicals and Acids

BRANCH OFFICES:

New York	Philadelphia	Birmingham, Charlotte	Boston
Chicago	Cleveland	Cincinnati	St. Louis
Detroit	New Orleans	Milwaukee	St. Paul, Providence

The GRASSELLI CHEMICAL CO., Limited

Toronto **Hamilton** **Montreal**

STOCKS CARRIED AT ALL PRINCIPAL POINTS

KALI MANUFACTURING CO.

JAMES A. BRANEGAN,
President

K TRADE MARK C
K AL I

S. G. DAVENPORT,
Secretary.

MANUFACTURING CHEMISTS

1404-1410 FRONT STREET **PHILADELPHIA, PA.**

HYDROXY
TRADE MARK — REGISTERED

Hydroxy Turkey Red Oil

Hydroxy Kier Oil
Removes Mineral Oil Stains from Cotton.

Hydroxy Black Developing Oil makes black intense and strong

Kali Chlorine Neutralizer prevents tender bleached goods
(Endorsed by Leading Bleachers)

Starch
Eagle Finishing

The experience of critical operators has shown this popular brand to be the most efficient sizing agent both for additional **weight** and increased **strength** of warp. Penetration accomplishes these important results.

EAGLE FINISHING is specially manufactured to cover a wide range of fluidities to meet the needs of all classes of weaves.

EAGLE FINISHING penetrates.

Corn Products Refining Co.
New York.

Southern Office, *Greenville, S. C.*

Starch

DU PONT AMERICAN INDUSTRIES

DU PONT DYESTUFFS

Sulphogene Blacks

GX, BX, AX

Sulphur Blacks are among the most important dyestuffs used in the cotton industry for obtaining fast blacks. In purchasing these products cotton manufacturers and dyers should give careful consideration to the following features now offered in the Sulphogene Blacks being manufactured by this company on a very large scale.

SHADE—The range of shades offered is such as to satisfy the various requirements—for a greenish cast, Sulphogene Black GX, for a bluish cast, Sulphogene Black BX, and for a reddish cast, Sulphogene Black AX.

¶ *Quality*—The entire manufacturing process is under thorough laboratory control, thus insuring, in every delivery, absolute uniformity in strength and shade, and freedom from those properties likely to cause tendering of materials or spontaneous combustion.

¶ *Quantity*—This product is being manufactured in sufficient quantity to furnish immediate and ample supplies for all requirements and at all times.

¶ *Price*—The price is based on the current cost of raw materials and production. It is fixed as low as possible in order to secure the widest sale and to retain and increase the economies resulting from large scale manufacture.

E. I. du Pont de Nemours & Co.
Dyestuffs Sales Dept.
Wilmington ∴ Delaware

Branch Offices:
New York Boston Providence
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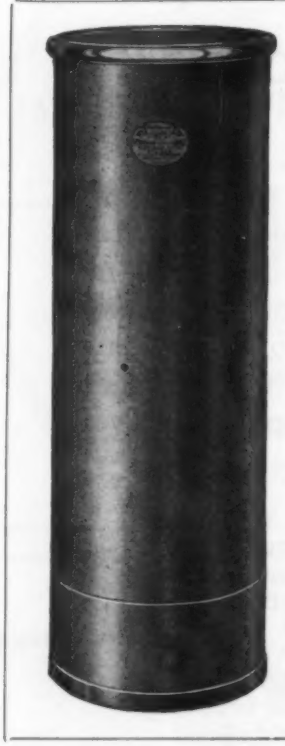
DU PONT

Leatheroid



The Best Roving Can Money Can Buy

Patented "Leatheroid" No. 1 Seamless Roving Can, rolled top, rolled in and under two and one-half times, having no steel ring underneath the roll to break the rim. Solid steel bottom, steel chime, 6 in. kicking band. 10x36, 12x36.

Leatheroid Roving Cans, Mill Cars, Mill Boxes, Mill Baskets and Doffing Cars are made in a variety of sizes and shapes. A booklet containing pictures and full information will be mailed on request.

Write for catalog.

ROGERS FIBRE CO.
LEATHEROID SALES DIVISION
1024 FILBERT STREET
Philadelphia
PA.

The Science of Being Right

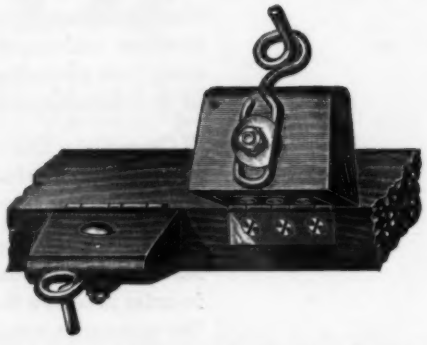
Business judgments involving millions must be founded on facts.

The National Bank of Commerce in New York gathers the facts of business from original sources which are not always open to smaller banks or to individuals.

Exact information on subjects related to intelligent, conservative and courageous business policy is at the disposal of our friends.

NATIONAL BANK OF COMMERCE
IN NEW YORK
Capital, Surplus And Undivided Profits
Over Fifty Million Dollars

The Palmer Adjustable Thread Guide



For Ring Spinning and Twisting Frames

Easily adjusted.

Extreme accuracy and permanence of setting.

Cheapest of them all.

Mail guide-block for free sample.

Patented and manufactured by

THE I. E. PALMER COMPANY
Middletown, - - - Connecticut

When High Wages Justify Themselves

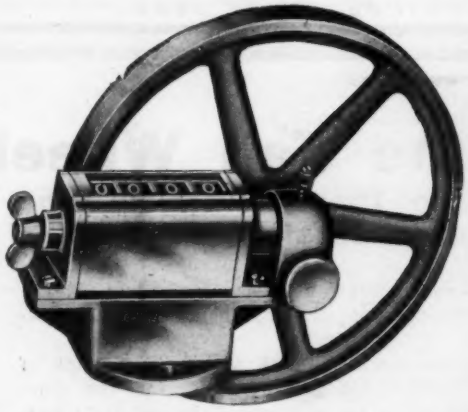
You can stand paying high wages when they're based on *efficient work*—when they're paid out of increased production by the operative.

Your intelligent workman is willing to maintain wages on that basis, and Veeder Counters help him to do it.

The output for each machine and the daily average for each job is indicated by

Veeder COUNTERS

—so that *standards* can be set which the operator can consistently follow.



The Set-Back Yardage Counter above measures the yardage of output of finishing and other machinery, where makeshift devices or expensive measuring instruments have been used. The straight face friction wheel ½ yard in circumference is geared so it counts in units of one yard. Runs on ball bearings, with practically no resistance; will not slip on the finest fabrics. And reads in plain figures—there's no disputing the count.

Nearly every textile machine can have a suitable Veeder Counter; the textile counter booklet shows models for the different machines. Let us supply you a copy.

The Veeder Mfg. Co.

6 Sargeant Street Hartford, Conn.

MOSSBERG

STEEL BEAMS AND SPOOLS

Leadership in the manufacture of textile equipment has been gained and maintained through adherence to principles of manufacture which insure to the user of Mossberg products the utmost in value and service.

Today the progressive type of agent and superintendent are enthusiastic over the developments of Mossberg Standardized Steel Textile Products. They have entirely eliminated the big overhead of eternally breaking beams and beam heads, and money spent for the steel constructed types may be charged to assets instead of liability.

Send for catalog and full particulars, with special specications if you desire.

FRANK MOSSBERG CO.

ATTLEBORO, MASS., U. S. A.

Tag Those Bales!

Shape M-564—Shows Bale No. with Name and Address of Ginner.

With Metal Tags, of Course!

METAL TAGS—Made of non-rusting tin or zinc—provide a means for permanently identifying cotton bales.

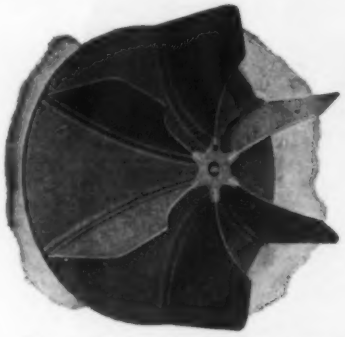
Furnished with name and address of ginner and bale No. or with two sets of numbers (lot number and bale number) as shown.

Ask for quotation in 1,000, 10,000 or 50,000 lots.

Shape M-638—Shows lot number, name and address of ginner, and bale number.

JAS. H. MATTHEWS & CO., Inc., PITTSBURGH, PA.

"MAKERS OF MARKING DEVICES SINCE 1850."



Here's the Fan Wheel

That Has Made These Reversible Fans So Universally Successful in Cotton Mills

This fan wheel is the secret of the success of our reversible fans for conveying Cotton, Wool, Rags and Stringy Material of any kind.

This fan wheel is constructed with a cone-shape back of cast iron with sheet steel blades cast solid. Note the short overhang, which makes the fan run smoothly without vibration. This wheel offers less resistance to material passing through than any other wheel. It handles long, stringy material just as good as short material or lint.

And it's reversible.

The fan is built solid and runs without a tremor at maximum speed. No buckling of suction at high speed. No rivets to work loose. Universal adjustment of bearings, not simply up and down.

Made in any size, from 30 to 60 inch.

Folder R. F. explains fully. Ask for it today. Our catalogs No. 65 and 67 show complete line of fans and blowers for every class of work.

We have a large stock of repair parts which can be shipped at a moment's notice.

BUILT RIGHT RUN RIGHT

The New York Blower Co.

513 Transportation Bldg., CHICAGO, ILL.

Works: BUCYRUS, OHIO.

Leader-News Bldg., Cleveland, O. 629 Nicholas Bldg., Toledo, Ohio 502 Plymouth Bldg., Minneapolis, Minn. 303 B. F. Jones Bldg., Pittsburgh, Pa.

E. C. Atkins Co., Memphis, Tenn., Southern Representatives.

Roy-Hardy Screw Traverse Cotton Card Grinder

THE endorsement of mills which stand at the head of the Textile Industry is stronger argument than anything we can say about our grinders.

B. S. ROY & SON CO.

Established 1868 SOUTHERN BRANCH: E. M. Terryberry, Agt., Howard Bros. Mfg. Co., 1126 Healey Bldg., Atlanta, Ga. **WORCESTER, MASS.**

Dependability! Accuracy!::::

"THE STANDARD" SCALES

Above all else, "The Standard" Scales are accurate.

In addition, they are rugged, and lend themselves readily to the problems which confront the textile plant, storage warehouses and baling plants.

We have in stock, or can build, any type to meet the particular need of those who must have accuracy combined with speed and durability.

Scales in all sizes and capacities from small counter scales up to 150 and 200 ton railroad track scales.

Our illustrated catalogue No. 85 has a fund of information, write for it.

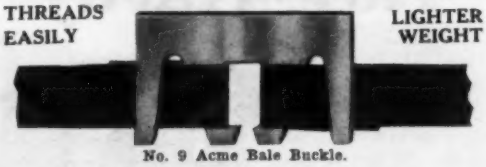
THE STANDARD SCALE & SUPPLY COMPANY

Pittsburgh, 1631 Liberty Ave.
New York, 145 Chambers St.
Chicago, 163-171 N. May St.
Philadelphia, 523 Arch St.
Cleveland, 1547 Columbus Rd.
Baltimore, 409 N. Gay St.

THE NEW ACME BALE BUCKLE

TAKES LESS TIME TO APPLY.

THREADS EASILY — LIGHTER WEIGHT



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BE SURE TO ORDER ACME COLD ROLLED BALING TIES. Smooth round edges, lacquered to prevent rust. Because of their light weight you get more to the pound.

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This barrel fountain made from 1⅝" thick selected oak with a heavy galvanized iron pipe coil and waste, represents a maximum life as the question of rust, common to all iron fountains, is eliminated. It is strongly constructed to withstand hard service, and will make for greater efficiency among your employees than any other item you can install.

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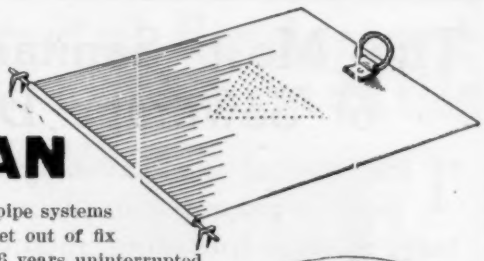

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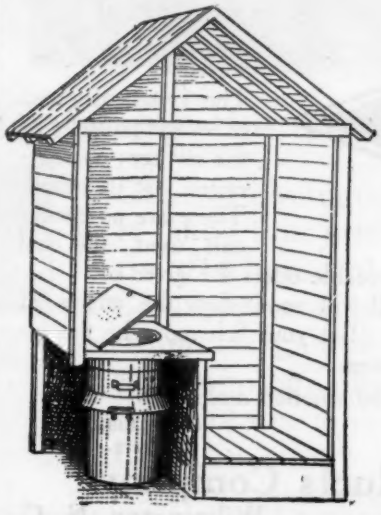

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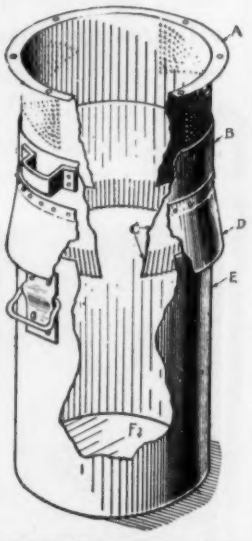

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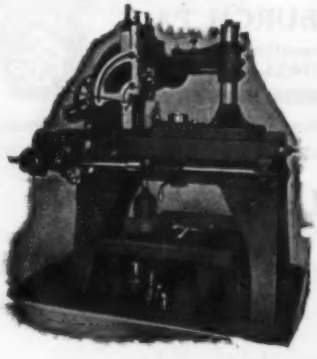

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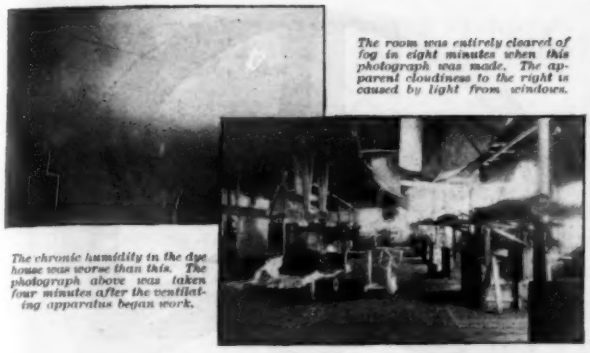

The room was entirely cleared of fog in eight minutes when this photograph was made. The apparent cloudiness to the right is caused by light from windows.

The chronic humidity in the dye house was worse than this. The photograph above was taken four minutes after the ventilating apparatus began work.

Ventilating the Dye House

"BUILDING WITH FORESIGHT"

The two photographs above were taken four minutes apart in the dye house of Faulkner & Colony, Keene, N. H. They are numbers 4 and 8 in a series of eight photographs, taken at intervals of one minute, illustrating the effect of proper ventilating apparatus.

Before the ventilators began to operate, it was difficult to see any object at a distance of 15 feet. At the end of eight minutes the air was perfectly clear throughout the room and remains so. The ventilating system, designed by Lockwood, Greene & Co., was installed at moderate expense and is economical to operate.

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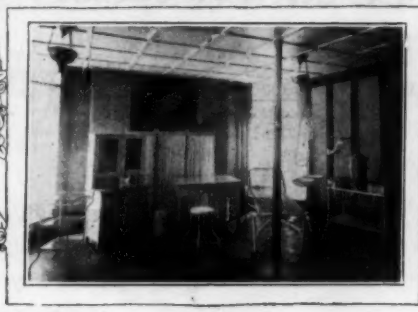

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The necessity for complete hospital equipment in all textile plants is being more and more appreciated by far-sighted mill executives. So many instances have been noted where emergency equipment could have saved the time-loss of injured or sick employees, or would have even been the means of saving lives.

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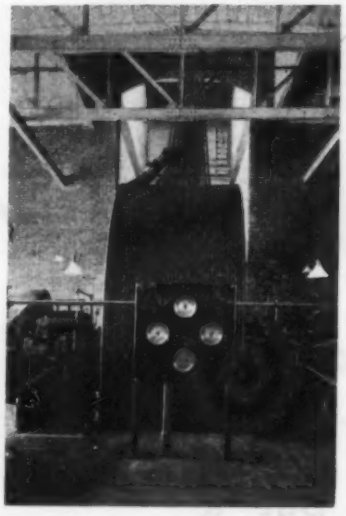

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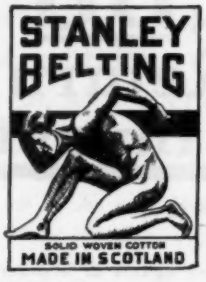

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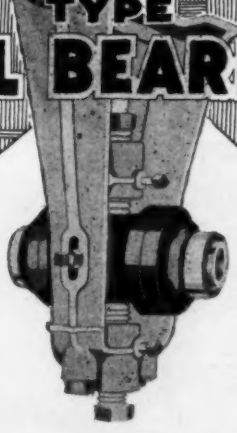

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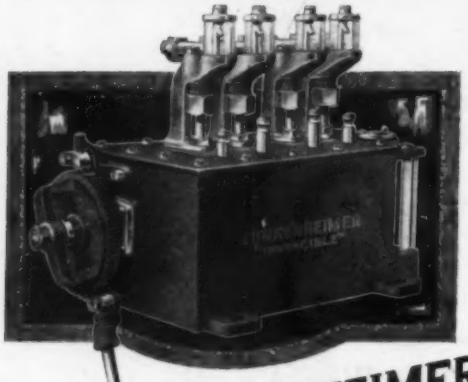
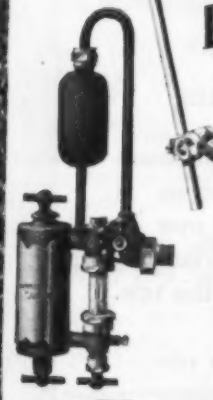
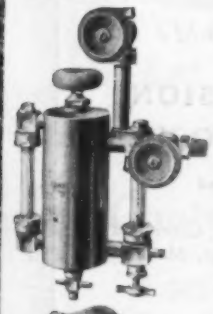


LUNKENHEIMER CYLINDER LUBRICATORS





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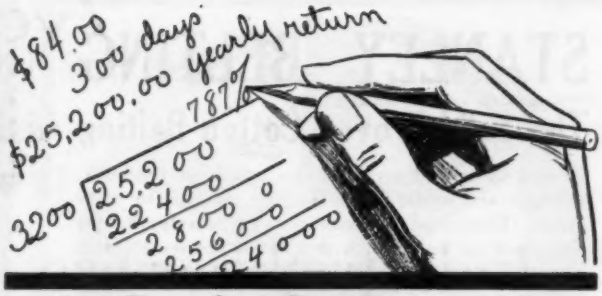

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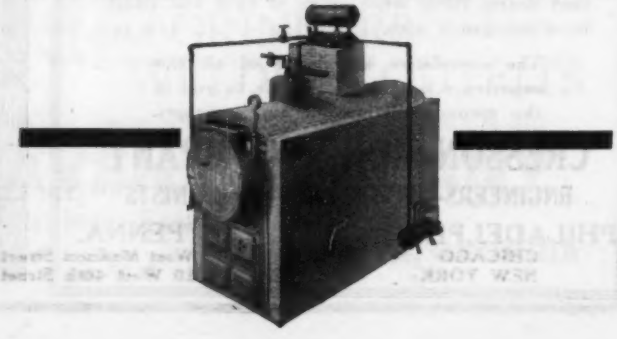

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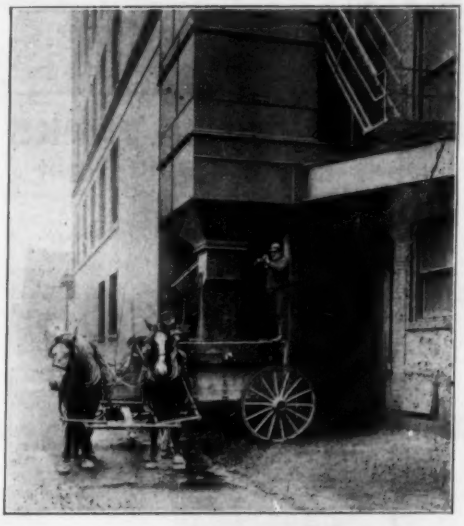

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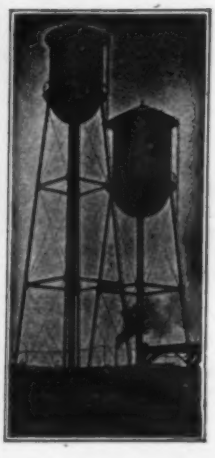

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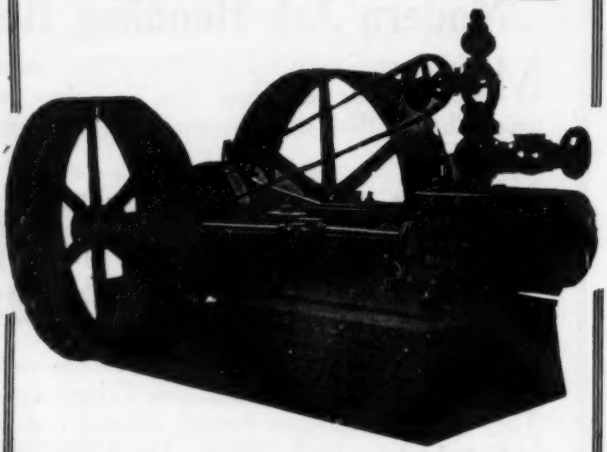

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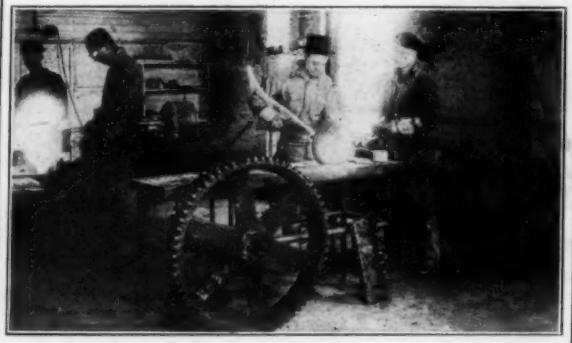

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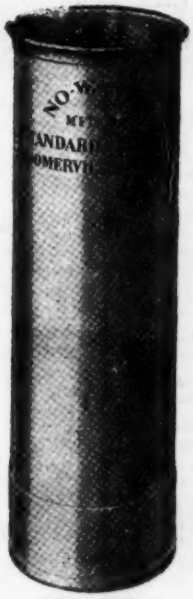

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(See Fans—Electric.)

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(See Lamps.)

Electric Lamp Guards.
Flexible Steel Lacing Co.

Electrical Machinery and Supplies.
Allis-Chalmers Mfg. Co.
Carpenter Co., Geo. B.
Carter Electric Co.
Chicago Fuse Mfg. Co.
Economy Fuse & Mfg. Co.
Federal Sign System (Electric)
General Electric Co.
Seeger-Walraven Co.
Snow & Co., E. W.
Walsh & Weidner Boiler Co.
Westinghouse Electric & Mfg. Co.

Electric Signs.
Federal Sign System (Electric).

Electric Sirens.
Federal Sign System (Electric).

Electric Tractors and Trucks.
Baker, R. & L. Co.
Cowan Truck Co.
Collins, J. D.
Elwell-Parker Elec. Co.
Hunt Co., C. W.

Elevators.
Collins J. D.
Hunt Co., C. W.
Link-Belt Company.
Seeger-Walraven Co.

Enamel—Mill White.
(See Paint—Mill White.)

Engineers (Mill).
(See Architects.)

Engines—Oil, Gas and Gasoline.
Carpenter Co., Geo. B.
Seeger-Walraven Co.

Engines—Steam.
Allis-Chalmers Mfg. Co.
Carpenter Co., Geo. B.
Lombard Iron Works & Supply Co.
Schofield's Sons Co., J. S.
Seeger-Walraven Co.
Toomey, Frank
Walsh & Weidner Boiler Co.

Engine Appliances—Oil and Steam.
Carpenter Co., Geo. B.
Jenkins Bros.
Lunkenheimer Co.

Engine Room Supplies.
Carpenter Co., Geo. B.
Goodyear Tire & Rubber Co.
Jenkins Bros.
Lunkenheimer Co.
Graton & Knight Mfg. Co.

Extractors—Hydro.
American Laundry Mchry Co.
Fletcher Works.
Schaum & Uhlinger.
Tolhurst Machine Works.

Fans—Electric.
Allis-Chalmers Mfg. Co.
Carter Electric Co.
General Electric Co.
Howard & Morse
Westinghouse Elec. & Mfg. Co.

Fans—Conveying, Power and Exhaust.
(See Blowers and Blowing Systems.)

Feed Water Purifiers.
(See Water Softeners.)

Felting Machinery.
Smith & Furbush Mach. Co.

Fence—Steel and Iron.
Anchor Post Iron Works.
Cyclone Fence Co.
Page Steel & Wire Co.

Fibre Products.
Keystone Fibre Co.
Lane & Bro., W. T.
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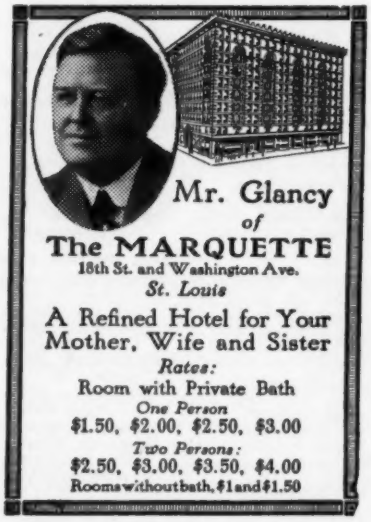

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BUYERS' INDEX—Continued.

Filters—Water.
(See Water Softening.)

Finishing.
(See Dyers, Bleachers and Finishers.)

Finishing and Sizing Materials.
Arabol Mfg. Co.
Bosson & Lane.
Corn Products Refining Co.
Dicks, David Co., Inc.
Douglas Co.
Du Pont de Nemours & Co., E. I.
Electric Smelting & Alum. Co.
Grasselli Chemical Co.
Hemingway, Inc., Frank
Kali Mfg. Co.
Klipstein & Co., A.
Levinstein & Co., Inc.
Newport Chemical Works, Inc.
Metz & Co., H. A.
National Aniline & Chemical Co.
Roessler & Hasslacher Chemical Co.
Seydel Mfg. Co.
Sherwin-Williams Co.
Sonneborn Sons, Inc., L.
Warren Soap Mfg. Co.
Wolf & Co., Jacques
Zavon, Inc.

Fire Escapes (Spiral).
Collins, J. D.

Fire Hose.
(See Hose—Fire.)

Fire Protecting Paint.
(See Paint—Fireproof.)

First Aid Room Equipment.
(See Hospital Equipment.)

Flooring (Hardwood).
Nashville Hardwood Flooring Co.

Fluted Rolls.
Howard & Bullough.
Saco-Lowell Shops.
Schofield's Sons Co., J. S.
Smith & Furbush Machine Co.
Southern Spindle & Flyer Co.
Whitin Machine Works.

Flyers.
Howard & Bullough.
Saco-Lowell Shops.
Southern Spindle & Flyer Co.
Whitin Machine Works.

Fountains (Drinking).
Manufacturers Equip. & Eng. Co.
Puro Sanitary Drinking Fountain Co.

Friction Clutches.
(See Clutches—Friction.)

Fuses.
(See Elec. Mchy. and Supplies.)

Garnett Machines.
Roy Son Co., B. S.
Smith & Furbush Mach. Co.

Gas Engines.
(See Engines—Gas.)

Gaskets.
Goodyear Tire & Rubber Co.
Graton & Knight Mfg. Co.

Gauge Cocks.
Lunkenheimer Co.

Gauges—Draft.
Taylor Instrument Co.

Ganges—Mercury Column Vacuum
Taylor Instrument Co.

Ganges—Oil.
Lunkenheimer Co.

Gauges—Water.
Lunkenheimer Co.

Gears—Silent.
General Electric Co.
Link-Belt Co.
Morse Chain Co.

Gear Cutters.
Cresson-Morris Co.
Whiton Mch. Co., D. E.

Gear Pullers.
Greb Co., Inc.

Generators—Electric.
(See Motors and Generators.)

Ginning Information.
Ginners Association.

Graphite—Products.
Dixon Crucible Co., Jos.

Grates—Shaking.
Lombard Fdy. & Mch. Co.

Grease.
(See Lubricants.)

Grease Cups.
(See Lubricators.)

Grinders—Card, Cylinder Roll, Napper and Garnett.
(See Card Grinding Machinery.)

Guards (Elec. Lamp.
Flexible Steel Lacing Co.

Guides (Thread).
Mitchell-Bissell Co.
Palmer Co., I. E

Gums.
(See Finishing and Sizing Materials.)

Hangers.
(See Shafting and Hangers.)

Hardwood.
Nashville Hardwood Flooring Co.

Harness—Loom.
American Supply Co.
Crompton & Knowles Loom Wks.
Emmons Loom Harness Co.
Garland Mfg. Co.
Electro Bleaching Gas. Co.

Heaters (Water).
Manufacturers Equip. & Eng. Co.

Heating and Ventilating Apparatus.
(See Ventilating Apparatus.)

Heddles.
Crompton & Knowles Loom Wks.
Draper Corporation.

Heddle Frames.
Crompton & Knowles Loom Wks.

Hoists.
Link-Belt Company.
Morse Chain Co.
Seeger-Walraven Co.

Hose—Fire.
Collins, J. D.
Goodyear Tire & Rubber Co.

Hosiery Finishing Boards.
(See Boards.)

Hosiery Forms.
(See Drying Forms.)

Hosiery Yarns.
(See Yarn Manufacturers.)

Hospital Equipment.
Thomas Co., F. H.

Hotels.
DeSoto.
Marquette.
Martinique.
Sinton.
Tuller.

Houses (Ready-Made)
Aladdin Co., The

Humidifying Apparatus.
Carrier Eng. Corp.
New York Blower Co.
Parks-Cramer Co.
Sturtevant Co., B. F.

Hydraulic Turbines.
(See Turbines Steam.)

Hydro Extractors.
(See Extractors.)

Hydrometers.
Taylor Instrument Co.

Hygrometers.
Taylor Instrument Co.

Hygrodeiks.
Taylor Instrument Co.

Indicating and Recording Instruments.
Taylor Instrument Co.
Tagliabue Mfg. Co., C. J.

Indigo.
(See Dyestuffs and Chemicals.)

Injectors.
Lunkenheimer Co.

Ink—Stencil and Marking.
Atlanta Stamp & Stencil Wks.
Bradley Mfg. Co., A. J.
National Marking Machine Co.

Iron Work—Ornamental.
Anchor Post Iron Works.
Cyclone Fence Co
Dow Wire & Iron Works.
Dufur & Co.
Howard & Morse.
Lombard Iron Works & Supply Co.
Page Steel & Wire Co.

Jacquards.
Crompton & Knowles Loom Wks.

Jute Bagging Machines.
Smith & Furbush Mach. Co.

Kettles—Size.
(See Size Kettles.)

Kettles—Soda
Lombard Iron Works & Sup. Co.
Manufacturers Equip. & Eng. Co.

Kiers.
(See Bleaching Kiers.)

Knit Goods.
(See Cotton Cloth Commission Merchants and Dealers.)

Knit Goods Washers.
(See Washers—Cloth.)

Knitting Machinery.
Boss Knitting Mach. Works.
Brinton Co., H.
General Machine Works.
Hemphill Mfg. Co.
Nye & Tredick Co.
Scott & Williams.
Smith & Furbush Mach. Co.
Wildman Mfg. Co.

Lamps—Incandescent and Arc.
Boston Economy Lamp Div.
Carter Electric Co.
General Elec. Co.
Westinghouse Lamp Co.

Lamp Guards (Key Locking).
Flexible Steel Lacing Co.

Lamp Reflectors.
Carter Elec. Co.
Ivanhoe-Regent Works.

Landscape Architects.
(See Village Architects.)

Lappers.
Saco-Lowell Shops.
Smith & Furbush Mach. Co.
Whitin Machine Works.

Laundry Machinery.
American Laundry Mchry Co.
Fletcher Works.
Schaum & Uhlinger.
Tolhurst Machine Works.

Leather Belting.
(See Belting.)

Leather Specialties.
American Supply Co.
Graton & Knight Mfg. Co.
Ladew & Co., Inc., Edw. R.
Williams & Sons, I. B.

Linen Yarns.
(See Yarns——Linen.)

Link Belting.
(See Belting—Link.)

Liquid Chlorine.
(See Chlorine.)

Loaders—Wagon and Trucks.
Link-Belt Company.

Lockers (Metal).
Collins, J. D.
Manufacturers Equip. & Eng. Co.

Logwood Extract.
(See Dyestuffs and Chemicals.)

Looms.
Crompton & Knowles Loom Wks.
Draper Corporation.
Fletcher Works.
Saco-Lowell Shops.
Schaum & Uhlinger.
Schofield Wm. & Co.
Stafford Co., The
Whitin Machine Works.

Loom Attachments (Auto).
Draper Corp.

Lubricants.
Dixon, Jos., Crucible Co.
Kellogg & Co., E. H.
N. Y. & N. J. Lubricant Co.
Swan & Finch Co.

Lubricators.
Lunkenheimer Co.
N. Y. & N. J. Lubricant Co.

Lug Straps.
(See Straps—Lug.)

Lumber.
Nashville Hardwood Flooring Co.

Marking Pots, Stencils, Inks, Etc.
Atlanta Stamp & Stencil Wks.
Bradley Mfg. Co., A. J.
National Marking Machine Co.

Marking Machines.
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Mercerized Yarns.
(See Yarns Mercerized.)

Mercerizing Machinery.
Butterworth, H. W. & Sons Co.
Textile Finishing Machinery Co.

Metal Ceilings, Etc.
Lupton's Sons Co., David.

Metals (Perforated)
(See Screens and Sieves.)

Metal Workers—Sheet.
Lombard Iron Works & Supply Co.
Howard & Morse.
Page Steel & Wire Co.

Meters—Flow, Air, Gas, Electric, Steam, Etc.
Allis-Chalmers Mfg. So.
Carter Electric Co.
General Electric Co.
Tagliabue Mfg. Co., C. J.
Taylor Instrument Co.
Westinghouse Elec. & Mfg. Co.

Meters (Revolution).
Taylor Instrument Co.

Mill Baskets and Boxes.
(See Boxes—Mill.)

Mill Engineer.
(See Architects and Engineers.)

Mill Villages.
(See Villages.)

Mill White Paint.
(See Paint—Mill White.)

Motors and Generators—Electric.
Allis-Chalmers Mfg. Co.
Carter Electric Co.
General Electric Co.
Seeger-Walraven Co.
Westinghouse Elec. & Mfg. Co.

Mule Stands.
Transmission Ball Bearing Co.

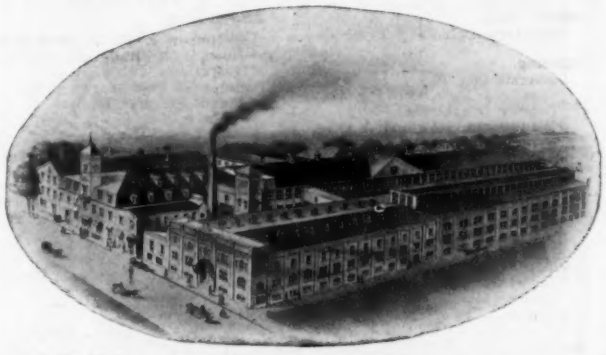
Nappers.
Roy & Son Co., B. S.

Oils—Finishing.
(See Finishing and Sizing Materials.)

Oils—Lubricating.
(See Lubricants.)

Oil Cups.
(See Lubricators.)

Oil Paper.
Bradley Mfg. Co., A. J.



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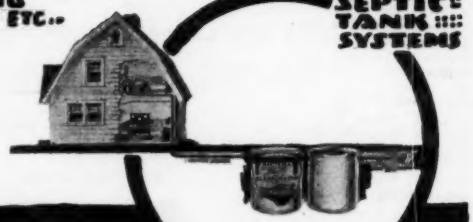

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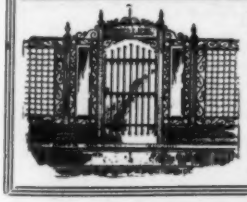

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(See Lubricators.)

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Smith & Furbush Mach. Co.
Whitin Machine Works.

Oxidizing Machinery.
Phila. Drying Machinery Co.

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Bird Wilcox Co.
Commercial Acetylene Supply Co.

Packings.
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Graton & Knight Mfg. Co.
Jenkins Bros.

Paint.
Barrett Co., The.
Chaffee, Thos. K.
Detroit Graphite Co.
Du Pont de Nemours & Co., E. I.
Sherwin-Williams Co.
Wadsworth, Howland & Co.

Paint—Preservative and Fireproof.
Barrett Co.
Detroit Graphite Co.
Du Pont de Nemours & Co., E. I.
Sherwin-Williams Co.
Wadsworth, Howland & Co.

Paint—Mill White.
Chaffee Thos. K.
Detroit Graphite Co.
Du Pont de Nemours & Co., E. I.
Sherwin-Williams Co.
Wadsworth, Howland & Co.

Paper—Oil.
Bradley Mfg. Co., A. J.

Perforated Metal.
(See Screens and Sieves.)

Peroxides.
Roessler & Hasslacher Chemical Co.

Phonographs (Dictating).
Dictaphone Co.

Pianos.
Stieff, Inc., Chas. M.

Pickers—Curled Hair.
Schofield, Wm. Co.
Smith & Furbush Mach. Co.

Pickers—Leather.
Garland Mfg. Co.

Picker Sticks.
Garland Mfg. Co.

Picking Machinery.
Howard & Bullough, Am. Machine Co.
Saco-Lowell Shops.
Schofield Co., Wm.
Smith & Furbush Mach. Co.
Whitin Machine Works.

Pipe Fittings.
Lunkenheimer Co.

Pipe Threading & Cutting Machines.
Seeger-Walraven Co.

Playground Equipment.
American Playground Device Co.
Dow Wire & Iron Works.
Hill-Standard Co.

Power Transmission.
Allis-Chalmers Mfg. Co.
American Pulley Co.
American Supply Co.
Carpenter Co., Geo. B.
Cresson-Morris Co.
Dodge Sales & Eng. Co.
General Electric Co.
Goodyear Tire & Rubber Co.
Graton & Knight Mfg. Co.
Hyatt Roller Bearing Co.
Kelly Co., Henry C.
Ladew & Co., Inc., Edw. R.
Link-Belt Company.
Morse Chain Co.
New Departure Mfg. Co.
Seeger-Walraven Co.
Stanley Belting Corp.
Transmission Ball Bearing Co.
U. S. Ball Bearing Co.
Westinghouse Elec. & Mfg. Co.
Williams & Sons, I. B.

Presses.
American Laundry Machnry. Co.
Bridge & Co., Ltd., David
Butterworth & Sons Co., H. W.
Economy Baler Co.
Phila. Drying Machine Co.
Reliance Machine Works.
Seeger-Walraven Co.
Smith & Furbush Mch. Co.
Textile Finishing Machinery Co. The

Pulleys.
American Pulley Co.
Cresson-Morris Co.
Dodge Sales & Eng. Co.
Link-Belt Company.
Seeger-Walraven Co.
Transmission Ball Bearing Co.

Pulley Covering.
Goodyear Tire & Rubber Co.
Stanley Belting Corp.
Williams & Sons, I. B.

Pumps.
Allis-Chalmers Mfg. Co.
Seeger-Walraven Co.
Textile Finishing Machinery Co.
Walsh & Weidner Boiler Co. The
Toomey, Frank.
Westinghouse Elec. & Mfg. Co.

Pump Valves.
See Valve Discs.

Psychrometers (Sling.)
Taylor Instrument Co.

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Tagliabue Mfg. Co., C. J.
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Terrell Mch. Co.

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Dufur & Co.

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Taylor Instrument Co.

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Saco-Lowell Shops.
Schofield, Wm. Co.
Whitin Machine Works.

Reflectors (Lamp)
Ivanhoe-Regent Works.

Regulators—Pressure
Tagliabue Mfg. Co., C. J.
Taylor Instrument Co.

Regulators—Temperature.
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Repairing—Textile of all kinds.
General Machine Works.
Southern Spindle & Flyer Co.

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Universal Winding Co.

Rib Top Cutters.
General Machine Works.
Wildman Mfg. Co.

Ring Travelers—Steel and Bronze.
Whitinsville Spinning Ring Co.
Whitin Machine Works.

Rings—Spinning.
(See Spinning Rings.)

Rocker Shaft Bearings.
(See Bearings.)

Rolls (Calender).
Roy & Son Co., B. S.

Rolls—Steel.
Southern Spindle & Flyer Co

Roofing.
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Cortright Metal Roofing Co.
Detroit Graphite Co.
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American Pulley Co.
Cresson-Morris Co.
Dodge Sales & Eng. Co.
Hunt Co., C. W. Inc.
Kelly Co., Henry C.
Link-Belt Company.

Roving Cans and Trucks.
(See Cans—Roving.)

Roving Machinery.
Howard & Bullough.
Saco-Lowell Shops.
Whitin Machine Works.

Rubber Stamps.
(See Stamps, Stencils, Etc.)

Rubber Goods.
Goodyear Tire & Rubber Co.

Sanitary Closet Cans.
Sanitary Eng. Co.
Selig Co.

Sanitary Products.
Cement Products Co.
Kaustine Co.
Rundle-Spence Mfg. Co.
Sanitary Eng. Co.
Selig Co.
Vogel Co., Jos. A.

Sash-Window—Steel.
Lupton's Sons Co., David.

Scales—Automatic.
American Kron Scale Co.
Standard Scale & Supply Co.

Scale Presenter (Boiler).
See Boiler Feed Water Purification.

Screens & Sieves—Perforated.
Beckley Perforating Co.
Erdle Perforating Co.
Link-Belt Company.

Sewing Machines.
Merrow Machine Co., The.
Textile Finishing Mchy Co.
Willcox & Gibbs Sewing Mach. Co.

Shafting & Hangers.
Cresson-Morris Co.
Dodge Sales & Eng. Co.
Link-Belt Co.
Seeger-Walraven Co.
Transmission Ball Bearing Co.

Shears.
Roy & Son Co., B. S.

Shelving—Sectional Steel.
Collins, J. D.
Lupton's Sons Co., David.
Manufacturers' Equipment & Eng. Co.

Shingles—Asphalt.
Barrett Co.

Shingles—Metal.
Cortright Metal Roofing Co

Shuttles.
Crompton & Knowles Loom Wks.
Draper Corporation.
Shambow Shuttle Co.

Sirens (Electric).
Federal Sign System (Electric).

Singeing Machinery.
Butterworth & Sons Co., H. W.
Phila. Drying Machine Co.
Textile Finishing Machinery Co. The

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Tagliabue Mfg. Co., C. J.

Size Kettles.
Butterworth, H. W. & Sons Co.
Howard & Bullough, American Machine Co.
Lombard Iron Works & Sup. Co.
Manufacturers Equip. & Eng. Co.
Saco-Lowell Shops.
Textile Finishing Machinery Co., The

Sizing and Finishing Compounds.
(See Finishing & Sizing Materials.)

Skewers.
Jordan Mfg. Co.

Skylights—Steel.
Lupton's Sons, Co., David.

Slashers and Slasher Room Supplies.
Butterworth & Sons Co., H. W.
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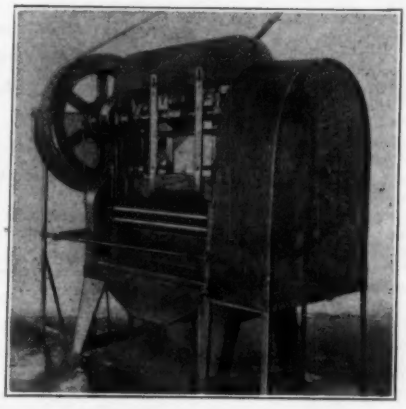

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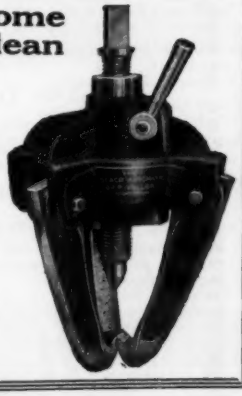

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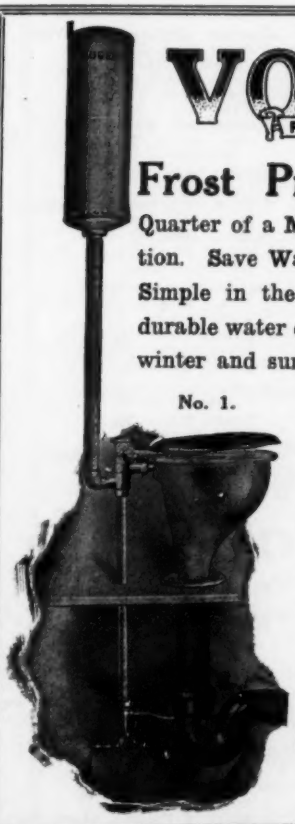

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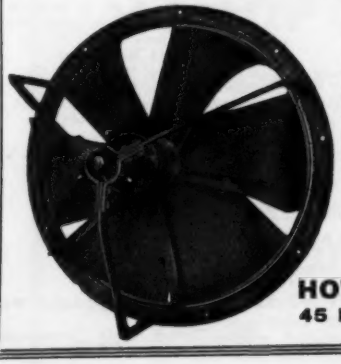

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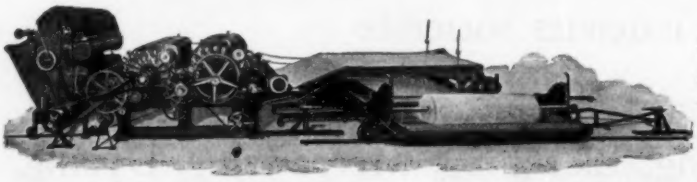

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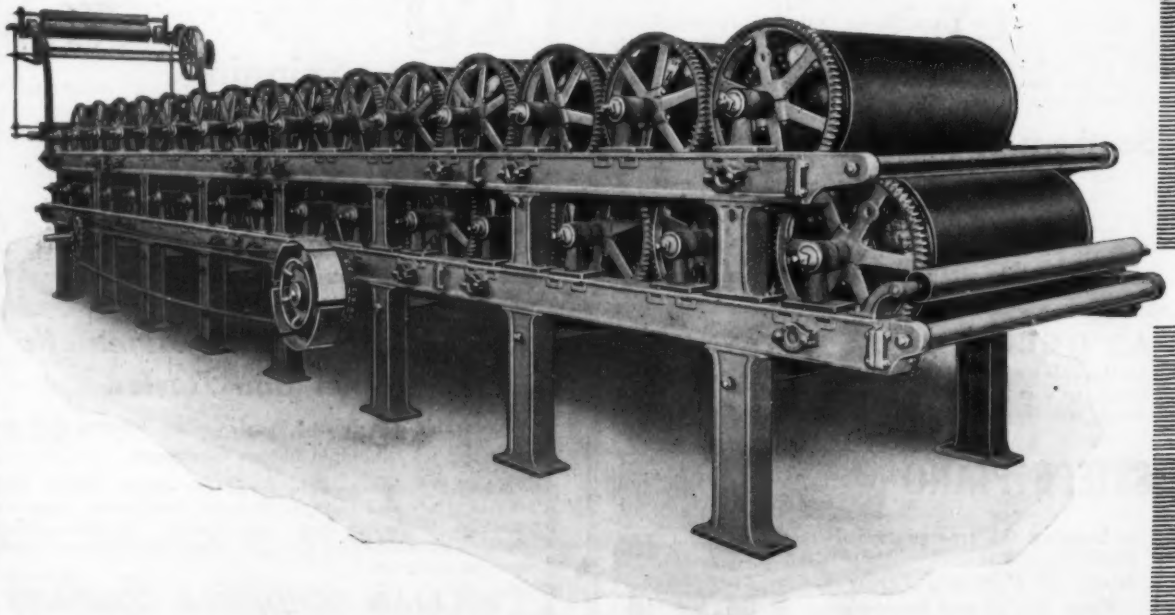

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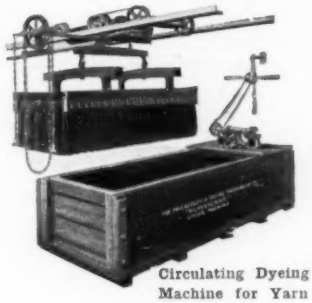

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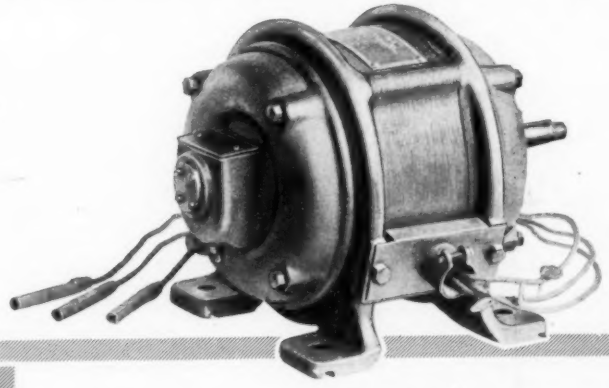

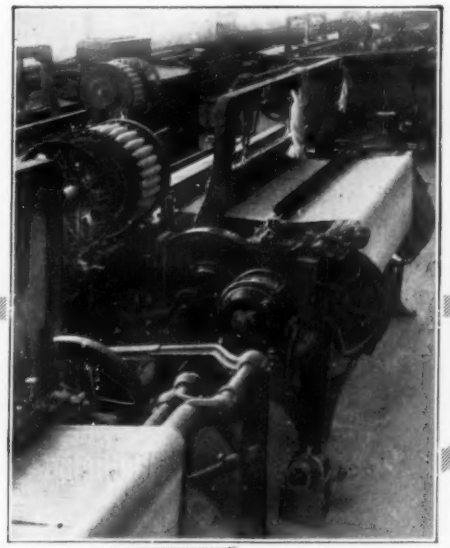

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